

# ماجستير تناسليه (8)

**Development of ext. genital.**

**Hematospamia.**

**Gynecomasha.**

**Anatomy of female genital.**

**Sexual cyck.**

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2017

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just print

01025329200- 0502200362

Clinically Important Points:

disturbance In the Genetic & Gonadal Sex

Hermaphroditism

can may be

True Hermaphrodite

Pseudohermaphrodite

The Individual has gonads of Both Sexes  $\left\{ \begin{array}{l} \text{Testes} \\ \text{Ovaries} \end{array} \right.$

discrepancy b/w

Genetic & Gonadal at one side & phenotypic sex at the other side.

♂ Pseudohermaphrodite

Genetic & gonadal sex

while

phenotypic sex

♂  $\rightarrow$  ♀

♀  $\rightarrow$  ♀

♀ Pseudohermaphrodite

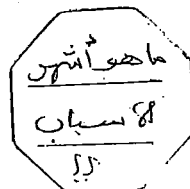
Genetic & gonadal sex

while

phenotypic sex

♀  $\rightarrow$  ♀

♀  $\rightarrow$  ♀



## development of ♂ sex organs

- ① Gonadal development
- ② Int. ducts "
- ③ Ext. genital "

### ① Gonadal development (Testis)

5th w → Gonadal Ridges development:  
Origin Prolif. of cells of  $\left\{ \begin{array}{l} \text{Coelomic Epith.} \\ \text{Mesoderm.} \end{array} \right.$

Site: dorsal embryo; each one lies  
 medial to Mesonephric Ridge.

Structure: at first → Solid Cords of cells  
 (Sex Cords) →

Then become Hollow → Seminiferous  
 Tubules that will anastomose  
 with each other → Rete  
 Testis.

6th w → Migration of Germ cells from the  
 yolk sac to the gonadal ridges

if Failed Migration → SCOS

7th w → Sertoli cell  
development  $\left\{ \begin{array}{l} \text{From: Coelomic Epith. (Inside S.T.)} \\ \text{Inside: Gonadal Ridges.} \end{array} \right.$

8th w → Leydig cell  
development  $\left\{ \begin{array}{l} \text{From: Mesoderm} \\ \text{Outside: Gonadal Ridge (outside S.T.)} \end{array} \right.$

## (609) Testicular development

- (5th W) → Seminiferous Tubules development From Gonadal ridge
- (6th W) → Germ cell migrat<sup>n</sup> From yolk sac to Gonadal Ridge
- (7th W) → Sertoli Cell developm.
- (8th W) → Leydig Cell development.

## 2. Int. ducts development (Int. genitalia).

every is No difference bet Duct systems of

(7th - 8th W)

Both  $\begin{matrix} \text{♂} \\ \text{♀} \end{matrix}$  →

Mullerian duct  
(Para. mesonephric d.) (7th W)

Regression under effect of MIS  
(From Sertoli) Except  
2 rudimentary

① prostatic Utricle: blind pouch on Top of  
C. Seminalis (prostat. Uthra)

② Appendix testis →  
Torsion → Blue dot sign "8"

③ may contain uterine tissue:  
that → Endometrial Carcinoma

④ may be ass. with Cong. Cyst → Ejac. duct obst.

Wolffian duct  
(Mesonephric duct) (8th W)

develop under effect of Testosterone into:

Body tail } Epididymis  
Vas  
S.V  
Ejaculatory duct

(12th W)

Then Ends by opening into "urogenital sinus" dividing it into 2 parts

① upper → UB  
→ Ureter

② lower → urethra (pen)  
prostate  
Ext. genitalia

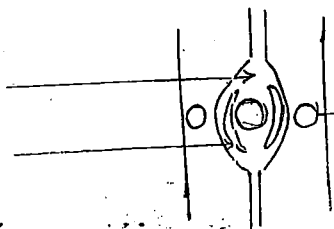


NB . Prostatic utricle

. UTricle = uterus

(as it may contain uterine tissue).

Colliculus  
Seminallis  
slit like  
openings of  
ejaculatory  
ducts.



prostatic  
Sinus (recieves openings of  
middle & lat lobes of  
prostate).

Prostatic  
Urethra

♀ Fetus (without MIS) → will give rise to  
upper vagina.

Appendix Epididymis = ~~remnant of mesonephric duct~~  
remnant of Mesonephric Duct.  
& is related to head of Epididymis.

Note  $\left\{ \begin{array}{l} \text{Mesonephric (Wolffian) duct} \rightarrow \text{Epididymis} \\ \text{Mesonephric Tubules} \rightarrow \text{Epididymal Head} \end{array} \right.$

Note  $\left\{ \begin{array}{l} \text{Appendix testis} \rightarrow \text{remnant of Mullerian duct.} \\ \text{Appendix Epididymis: remnant of Mesonephric Tube} \end{array} \right.$

Mesonephros (Embryonic Excretory organ)

Mesonephric (Wolffian)  
duct

$\left\{ \begin{array}{l} \text{Epididymis} \\ \text{Vas} \\ \text{SV} \\ \text{Ejac. ducts.} \end{array} \right.$   
(also UT)



Mesonephric tubules

Efferent ductules  
(Head) of Epididymis

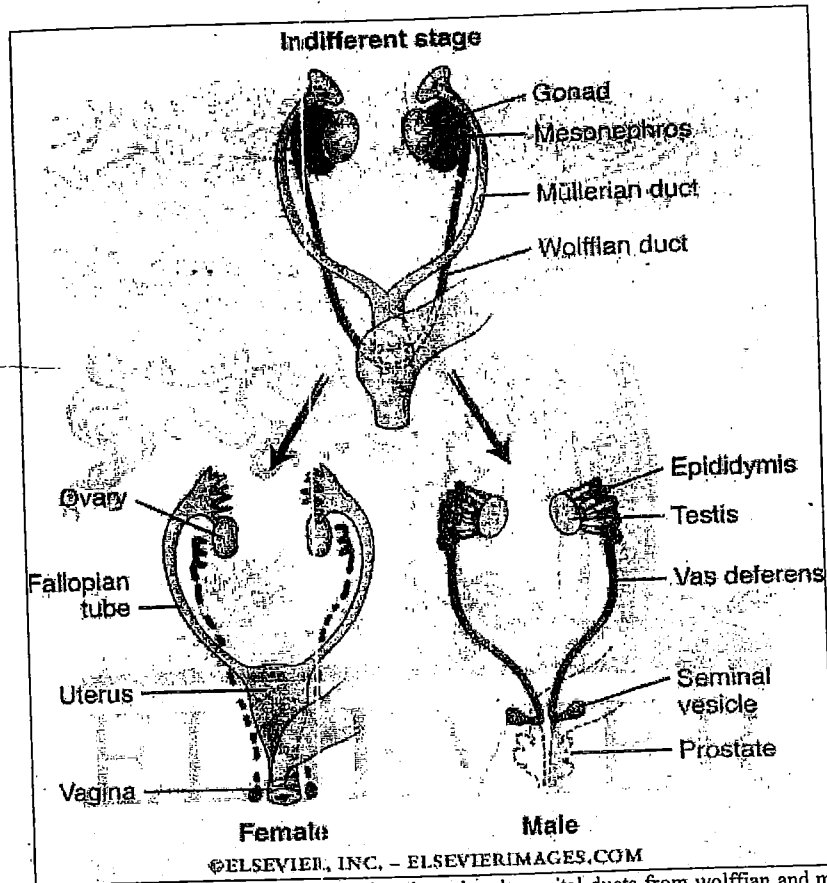
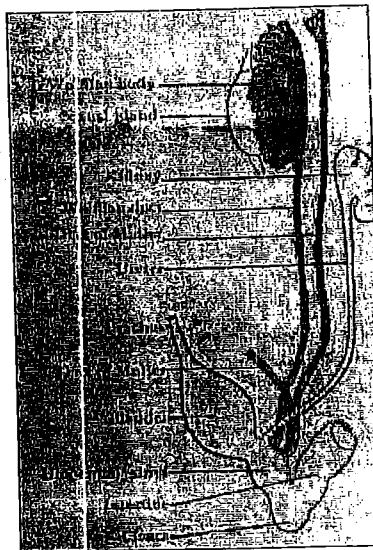
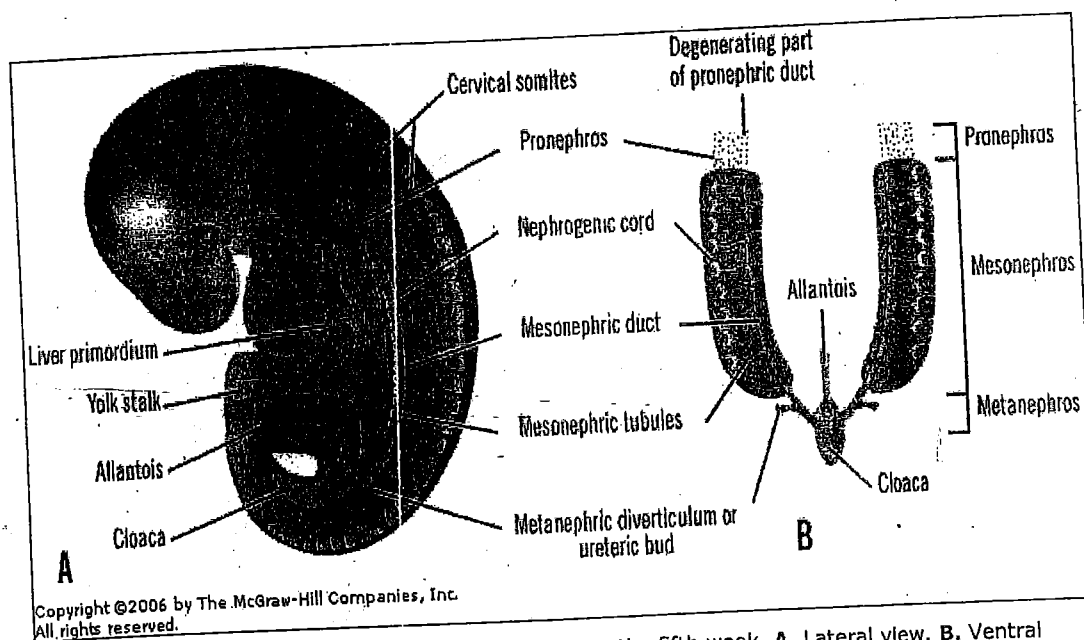
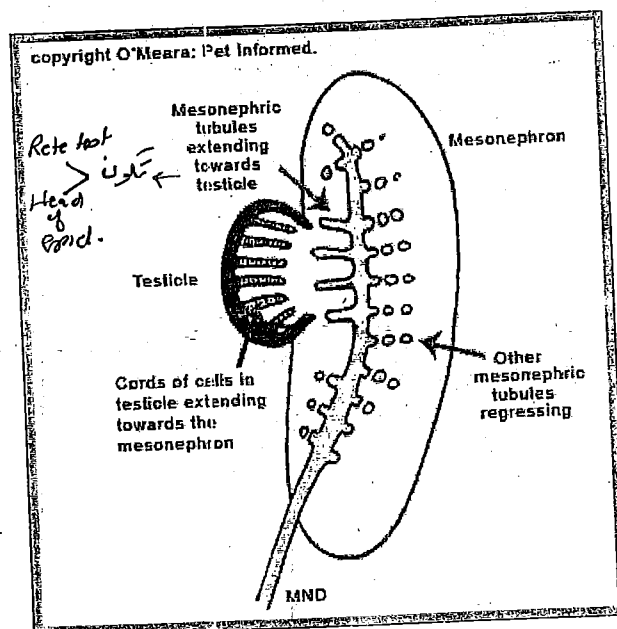


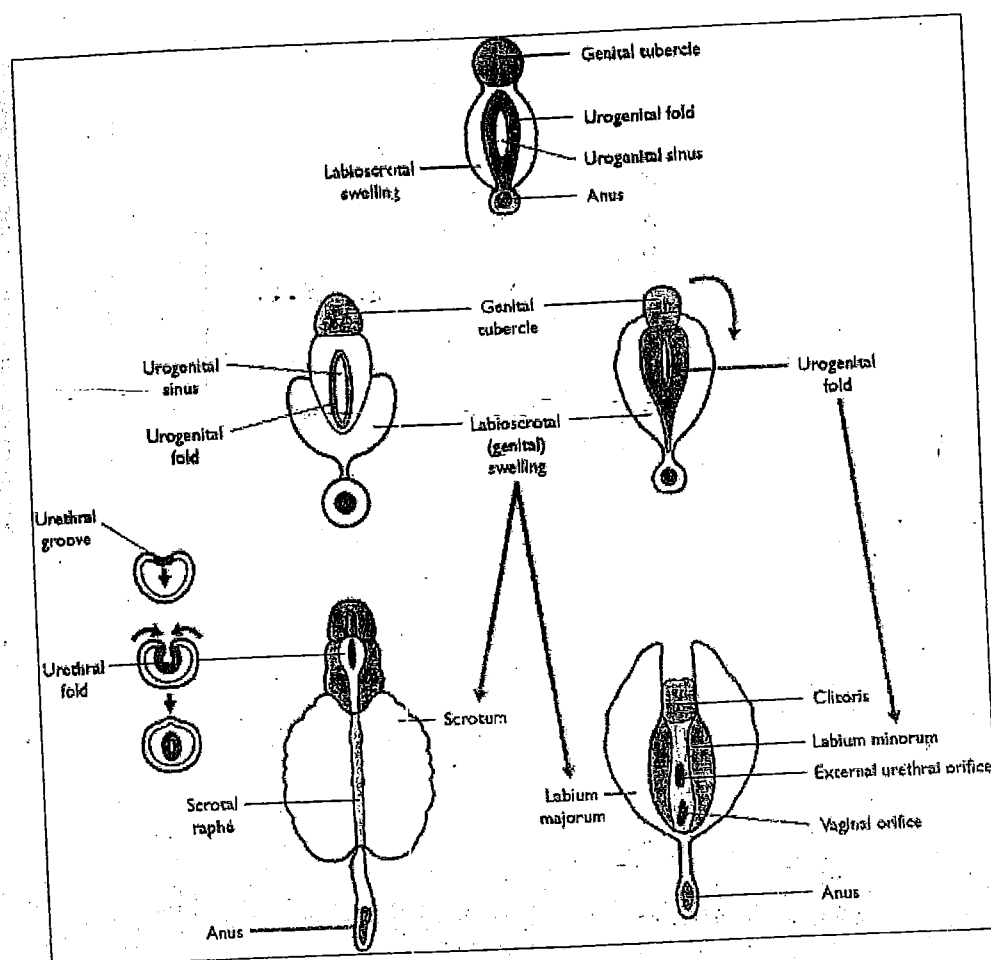
Figure 22-12 • Embryonic differentiation of female and male genital ducts from wolffian and müllerian primordial, prior to descent of the testes into the scrotum. In females, müllerian structures persist to form the fallopian tubes, uterus, and upper portion of the vagina. The lower portion of the vagina and urethra are derived from the urogenital sinus. In males, wolffian structures develop into the epididymes, vasa deferentia, and seminal vesicles, whereas the prostate and prostatic urethra are derived from the urogenital sinus. In some cases, a small müllerian remnant can persist in males as a testicular appendage





The three sets of excretory systems in an embryo during the fifth week. **A.** Lateral view. **B.** Ventral view. The mesonephric tubules have been pulled laterally; their normal position is shown in **A.** (Modified from Moore KL, Persaud TVN. The Developing Human. Clinically Oriented Embryology (6th ed). Philadelphia: WB Saunders, 1998; with permission



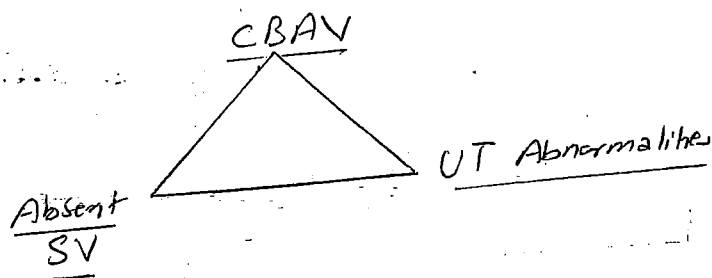


DEVELOPMENT OF EXTERNAL GENITALIA



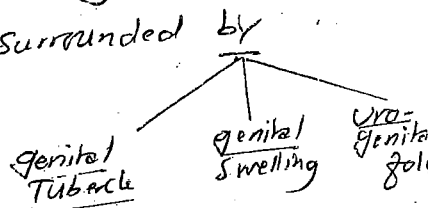
NB

BECAUSE SV develop as outgrowths from  
The Vas so CBAV → Absent SV  
→ Search for other wolffian duct  
structures abnormalities, e.g. "UT"



### 3 development of Ext. Genitalia:

The wolffian duct ends by opening into the  
Urogenital sinus & its opening surrounded by



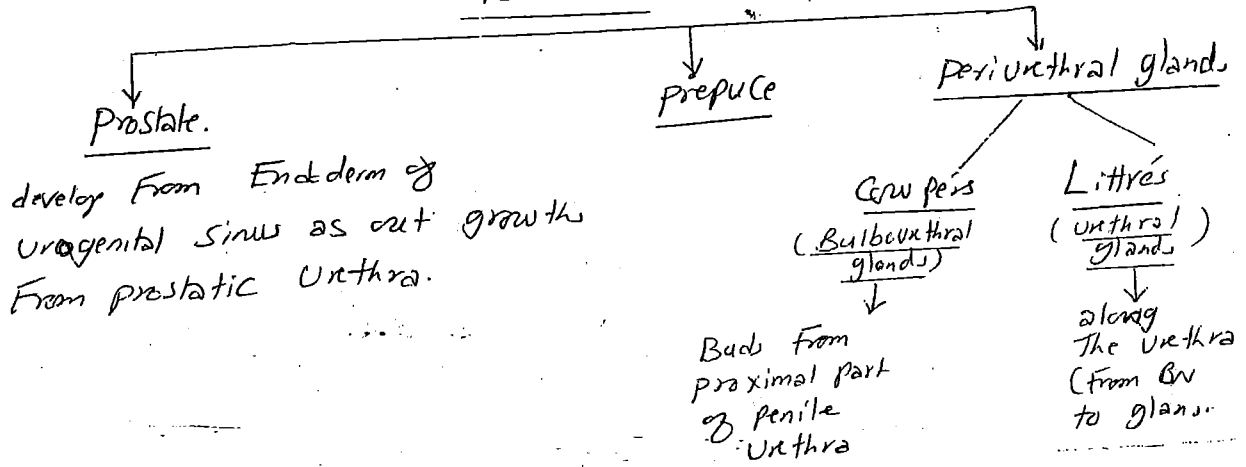
Formation of Ext.  
genitalia is under DHT

development occurs as following:

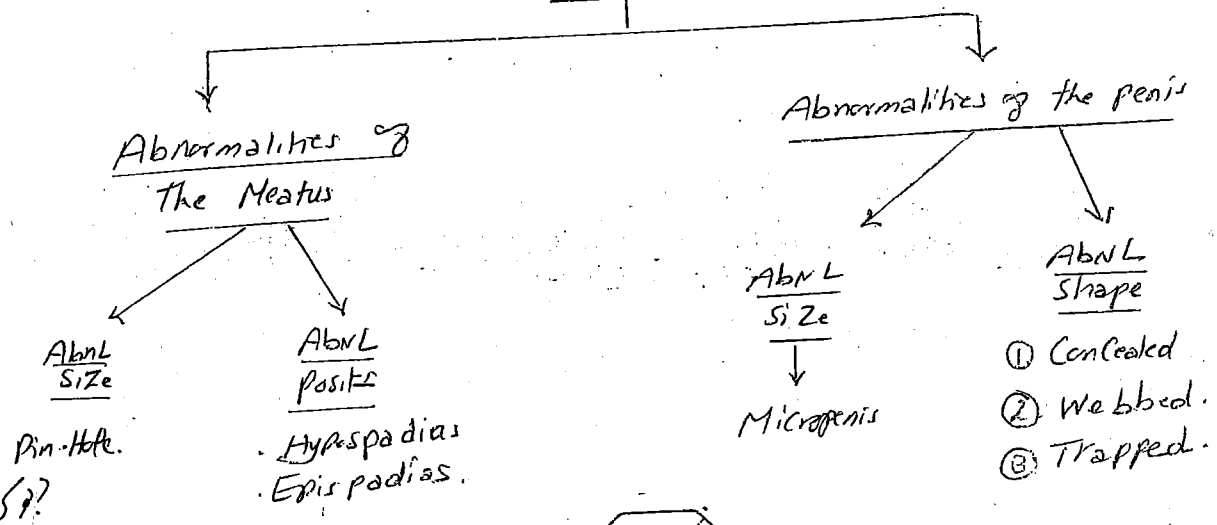
- ① Genital tubercle → penis
- ② Genital Swelling → scrotum
- ③ Urogenital fold → Penile Urethra.

NB. Paradiidymal (organ of Gembles) : small collect  
of convoluted tubules in front of lower part of  
Spermatic Cord above head of cord.  
remnant of wolffian Tubules.

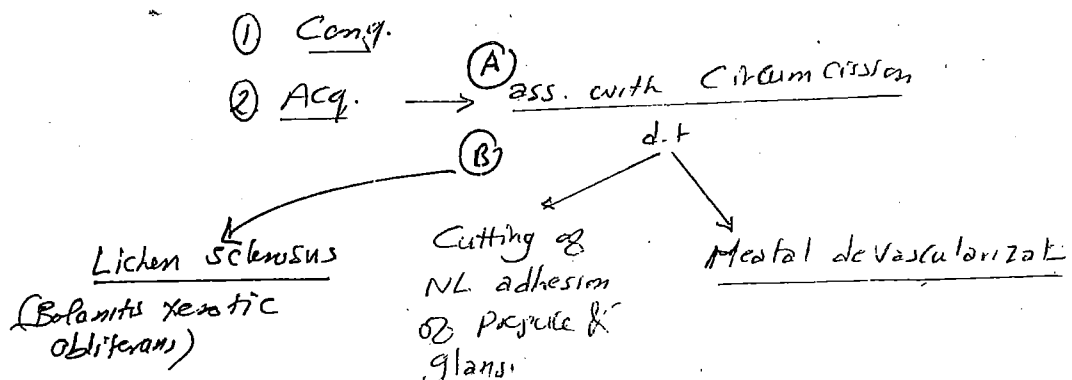
## 3 structures related TO Uthra



## Cong Anomalies of Exl. Genitalia.



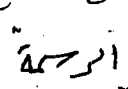
Pin. Hole  
Meatus  
Caused:



# Abnl Position

## Hypospadias

Urethral Meatus <sup>open</sup> at  
Ventral Surface of penis.

Types → (8) 

- Glansular
- Subcoronal
- distal penile
- Midshaft
- proximal penile

- Periscrotal
- Scrotal
- Perineal

Severe form may be ass. w:

① Bifid scrotum (Failed  
Fusion of genital swellings)

② Penile Curvature (Chordee): →  
Failed semen deposit →  
infertility.

Head curved  
upward or downward. [ d.t arrest of  
development  
at this stage ]

## Epispadias

Urethral Meatus  
→ on dorsal  
Aspect of  
penis.

→ (Separation of  
2 halves of scrotum.)

### Etiology:

1. Sex development disorder
2. Intersex
3. Complicated  
Circumcision.

NB - proper formation of prepuce needs proper fusion  
of urogenital folds to form the urethra.  
Cases of Hypospadias are ass. with incomplete  
ventral surface of prepuce.

77. Paraphimosis: Failure of Repositioning of  
prepuce over glans.  
Phimosis: Narrowing of opening of prepuce.

## Abnl Position of penis



### Inconspicuous penis

سفن (Buried penis)

#### Contracted Penis

NL penis that covered dorsally (سفن) by suprapubic fat

(Etiology)

Cong

(1) Cong. Fat pad at penile base.

(2) Thickening by dartos ms. w is too tight.

(3) inelastic dartos fascia → abnl attachment of skin on shaft (free mobility of skin).

Acquired

Obesity  
(↑ suprapubic fat)

#### Webbed penis (buried - hidden)

NL penis

that covered ventrally by scrotal skin (usually associated with Hypospadias).

(Etiology)

Cong.

Abnl attachment bet. penis & scrotum  
(distal attachment of scrotal skin)

Acquired

Following Circumcision

- Trapped Penis: penile shaft is overrun by scar tissue & becomes embedded in scrotum & prepubic fat.

بعض بعد الطارة  
لوقص حلق كثير.



# Micropenis (Wiki & !)

• at 12-24th wks Intra uterine : growth started & The length  $\approx$  3mm. ( $\frac{1}{2}$  cm) From ??

• At birth  $\rightarrow$  3.5 cm ( $\pm$  0.8)

• Adult. length  $\rightarrow$  13 cm ( $\pm$  1.6)

After puberty remains the same length for life.

Micropenis  $\rightarrow$   $\downarrow$  penile length by at least 2.5 standard deviations below the mean size.

e.g Penis  $<$  2cm. at birth.

Circumf.  
 $\approx$  12.3 ( $\pm$  1.3)

• Base  
• Mid shaft  
• below head

## How to Examine (cf.)

- Suppressing pubic fat inside
- Stretch the penile shaft outside
- Measure the length from tip to its root at bone.

## Circumcision of ♂

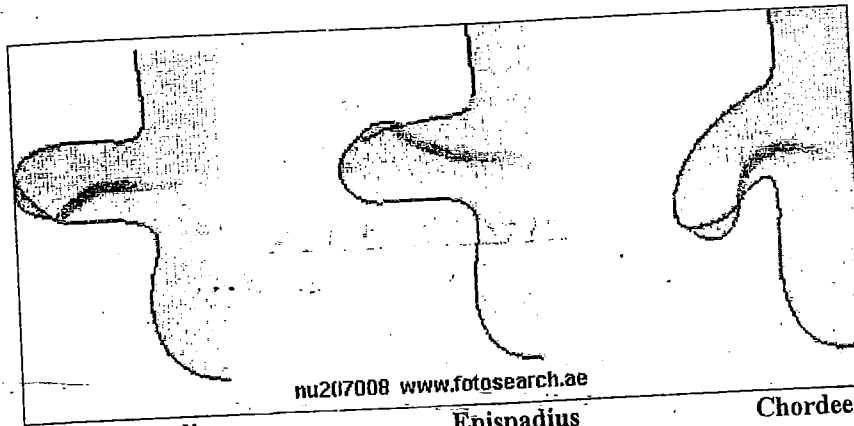
• Indications  $\begin{cases} \text{Religious} \\ \text{Social} \\ \text{Medical} \end{cases}$  Reasons

- ①  $\downarrow$  incid of penile cancer
- ②  $\downarrow$  " of Cervical "
- ③  $\downarrow$  " of STDs.
- ④  $\downarrow$  " of

UTI  
phimosis  
Balanoposthitis

## Contra indications:

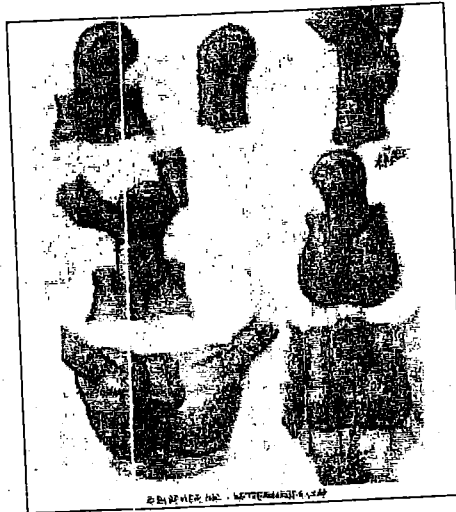
- ① Penile Causes  $\begin{cases} \text{Hypospadias} \\ \text{Micro penis} \\ \text{Webbed Penis} \end{cases}$



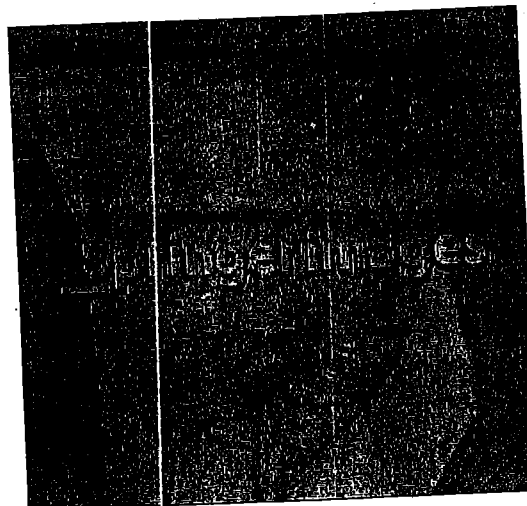
Hypospadias

Epispadias

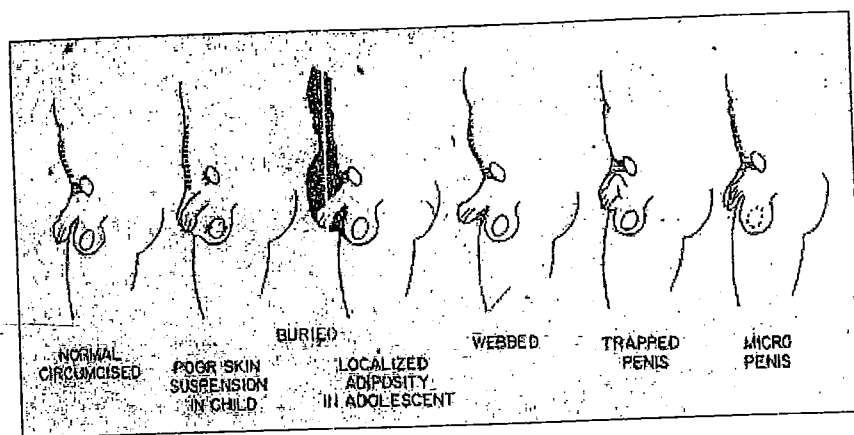
Chordee



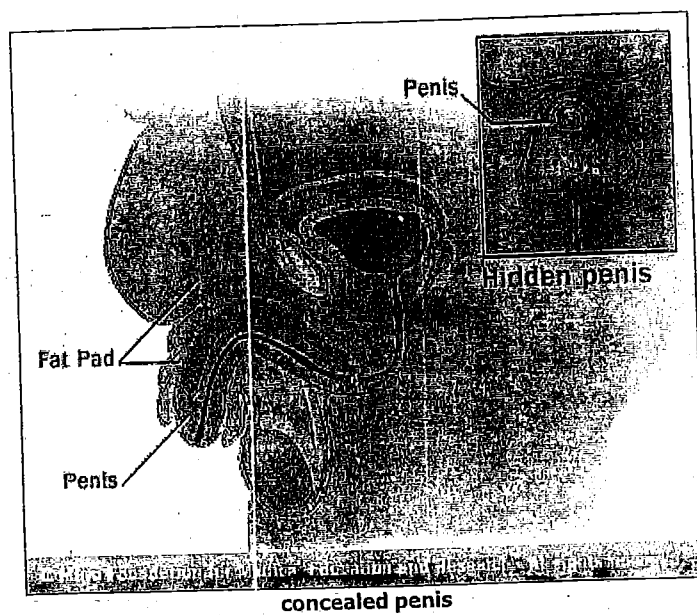
Chordee



Bifid scrotum



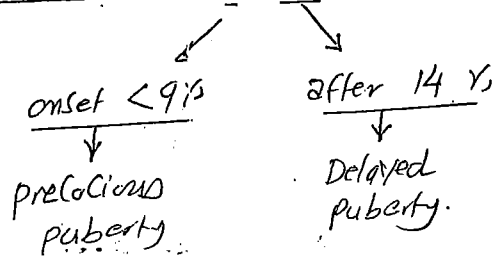
Types of Inconspicuous Penis





### Age of Puberty

Starts at (onset) : 9-14 ys & Completed in 4-6 ys



### Manifestations (Clinical Signs) of puberty:

Clinical Hist. & etc

علامات جسدية واضحة للذكورة

1. ↑ Testicular volume (ازدياد حجم الخصيتين)
2. Longitudinal growth spurt.
3. Pubarche
4. Apocrine Sweating & Ache (Body odor & oiliness)
5. Penile Enlargement & Muscular Hypertrophy
6. Others:

الترتيب

2A

#### (i) Body Hair

• Pubic Hair → axillary → perianal → upper lip.  
 → preauricular → pericard & beard.

#### (ii) Facial Hair

• not all ♂ have facial hair.

#### (iii) Foreskin retracts:

• يبدأ من البلوغ. يزداد حساسية  
 ولفه لانه نحية

# Tanner Scaling For Ext. Genitalia & Pubic Hair

## Genital Stages

Tanner I: prepubertal ( $\leq 9$  y)

Testis:  $\leq 3$  ml ( $L \leq 2.5$  cm)  
 Penis:  $\leq 3$  cm  
 Scrotum: thin, red

Tanner II (9-11 y)

Testis:  $\leq 4$  ml (2.5-3.2)  
 Penis: unchanged  
 Scrotum: thin, reddens & enlarges.

Tanner III: (11-12.5 y)

Testis:  $\leq 10$  ml (L: 3.5-4 cm)  
 Penis:  $\approx 5$  cm  
 Scrotum: Enlarges more

Tanner IV: (12.5-14)

Testis:  $\leq 16$  (L: 4-4.5 cm)  
 Penis: 10 cm  
 Scrotum: Enlarges & Darken.

Tanner V: ( $> 14$  y)

Testis:  $\leq 25$  (L:  $> 4.5$ )  
 Penis: 15 cm  
 Scrotum: Adult. (Enlarged, Dark, ruga).

## Pubic Hair Stages

Tanner I ( $< 10$  y)

No pubic hair (Dominic state)

Tanner II (10-11.5 y)

Hair: Few downy (4y, 4L)  
 Slight pigm.  
 at penile base  
 fine unpigmented scrotum

Tanner III (11.5-13)

Hair: Coarse curly  
 Extend laterally

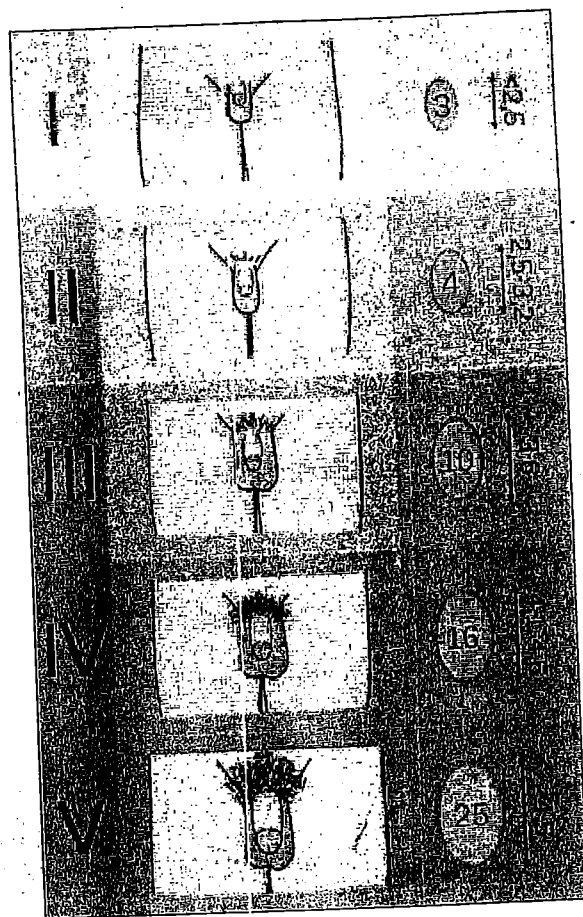
Tanner IV (13-14 y)

Extends across pubis.

Tanner V ( $> 14$  y)  $\rightarrow$

extend to medial thigh.

NB: spermarche: is the onset of appearance of sperms in urine of pubertal  $\sigma^7$ , usually at 13.5 y; but fertility is achieved (nubility) usually at 14 y - 16 y.

Tanner scale-male

NB : Histological changes of Testis during Puberty:

A. Resting phase: (birth - 4y)

. ST are small & No cellular differentiat<sub>n</sub>

B. Growth phase: (5th - 9th y):

. ST: ↑ No, ↑ length, ↑ Tortuosity

. Cell diff. → No.

C. Maturat<sub>n</sub> phase: (>9y)

. S.T: More ↑↑ in <

. Cellular differentiat<sub>n</sub> into spermatogenesis.

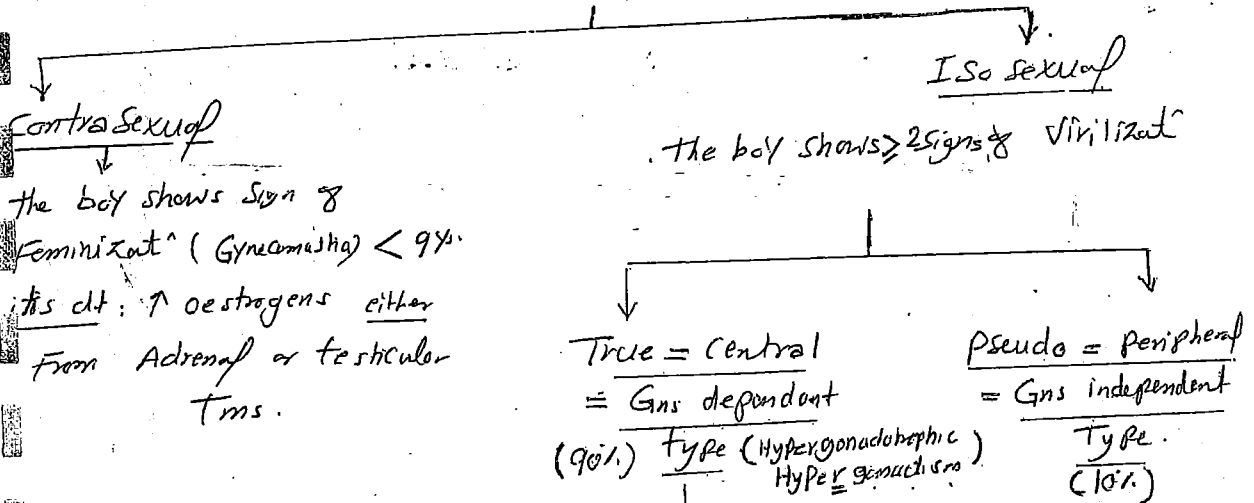
gynob

## Puberty disorders

(Updated Clinical And. 2011)  
(AAPP 2011)

- ① Precocious puberty (♂: ♀ = 1:10)
- ② Delayed puberty (♂: ♀ = 10:1)

Precocious Puberty: appearance of  $\geq 2$  pubertal signs before Age of 9y.



Called True: because Pubertal manifestations are complete & in same sequence as NL, physiological puberty.

(d.t) Premature Release of GnRH → ↑ FSH & LH  
→ Testosterone & Initiate of spermatogenesis & virilization

(AET)

AET - Idiopathic CNS disorders

- ① Idiopathic (Familial): No organic CNS Abnormality; but may be caused by psychological Trauma or social embarrassment. (2-3%)

- ② CNS disorders: (Hypothalamic lesion: ± (Tm) Functioning → Precocious P. Destructing → delayed P.)

- a. Hypothalamic Hamartoma (Commonest): No neurology manifests but there may be delayed motor & speech development
- b. Hypothalamic Tms

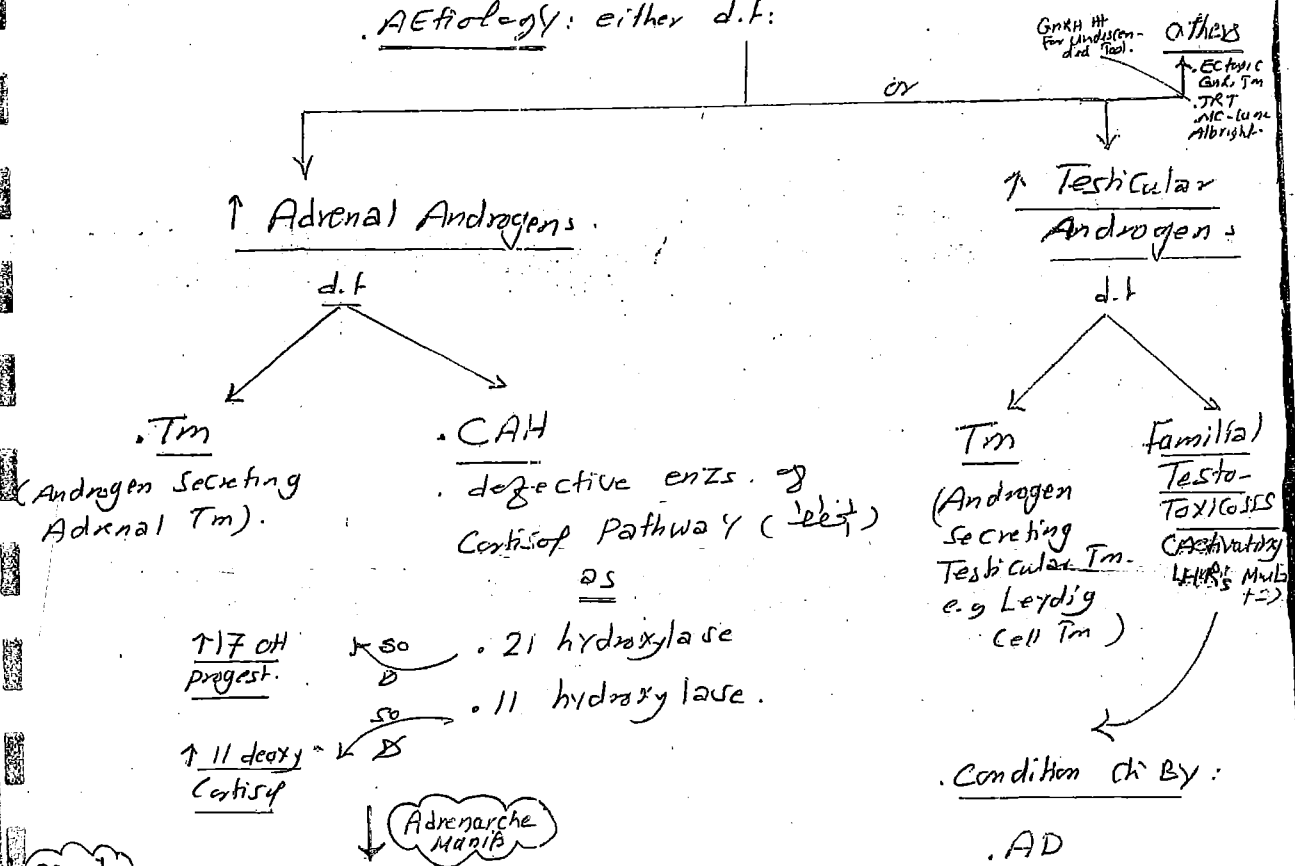


- △. Hydrocephalus.
- △. Head trauma.
- △. Encephalitis & Meningitis.

Pseudo precocious puberty = (Hypogonadotropic hypergonadism)  
Peripheral = Gns independent type

ch-BY / NL GnRH (Excess & Androgen products w is Gn independent).  
- Manifests are:  
- incomplete (eg Adrenarche only)  
- not in the same sequence as in NL physiological puberty (AAR)  
(Penile Enlargement & out testicular)

Aetiology: either d.t:



SSad

Note: No change in Testicular Size but there is Pubic Body Hair appearance, oily skin, odor

AD  
Mutation in genes encoding LH Receptors → Autonomous T. products

(AAPP 2016)  
(99)

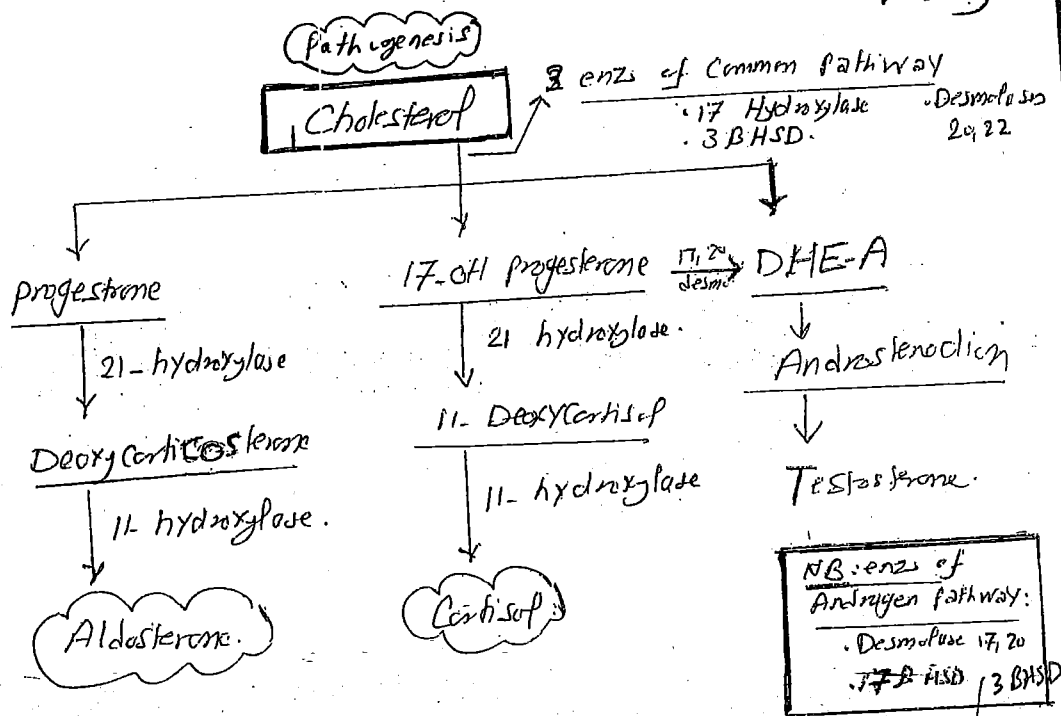
(NB) what is CAH (Cong. Adrenal Hyperplasia)

Def. Adrenal disorder ch- by defect in one or more enzs. responsible for Glucocorticoid Synth. (Cortisol) → 3 effects

- (1) ↓ Cortisol Synth. → ↑ its precursors, Addison, AH
- (2) shift of Cortisol ~ to Androgen pathway  
→ Precocious Puberty (in ♂) & Ambiguous genitalia (in ♀)
- (3) ↓ Mineralocorticoid Synth. (↓ Aldosterone) →

the most common 2 enzs: 1. 21 hydroxylase.  
2. 11-β

Hypotension  
Syncope  
Electrolyte #  
Washing



So For Diagnosis of CAH:

- (1) In 21-hydroxylase ↓↓ → ↑ Pregest. & 17-hydroxy pregest.
- (2) In 11-hydroxylase ↓↓ → ↑↑ 17-OH Preg., ↑↑ Deoxycorticosterone & Deoxycortisol.
- (3) ↑↑ Androstenedione: More stable & more diagnostic than 17-OH Pregest. in D of 21-hydroxylase def.

Review

Diagnosis

(1) ↓ 21-hydroxylase  
↑ Androstenedione

(2) ↓ 11-hydroxylase  
↑ Deoxycorticosterone & Deoxycortisol

(3) Both enzs.  
17-OH Pregest.

(Cup 201)

## Diagnosis

### Diagnosis of Precocious Puberty:

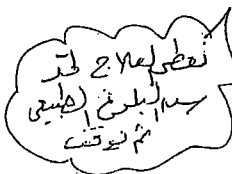
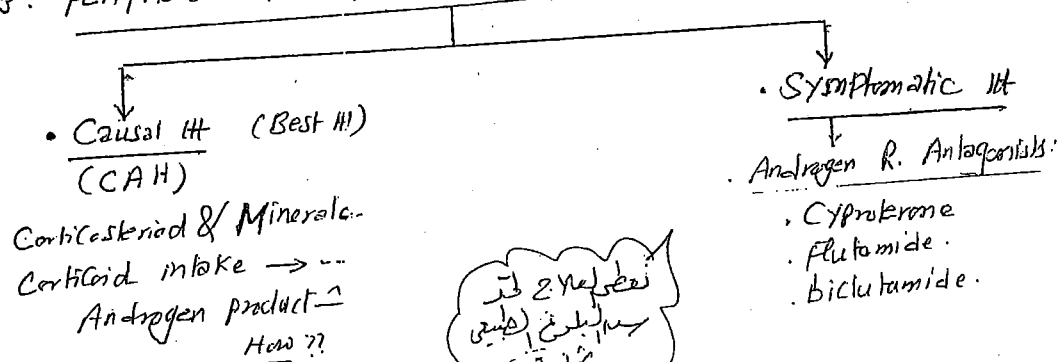
1. Central Type:  $\uparrow$  GnRH,  $\uparrow$  FSH & LH.
2. Peripheral (Pseudo) Type:  $\downarrow$  FSH & LH & GnRH.
3. Diagnosis of CAH: See Above.
4. Adrenal Tms:  $\uparrow$  Urinary 17-Ketosteroids (DHEA, DHEA-S & Androstenedione)



### Treatment

(updated 2011)

1. of the cause e.g. Hydrocephalus & Tms.
2. Central precocious puberty:  $\rightarrow$  (Best # 15) High dose long acting depot GnRH agonist 1 month  $\rightarrow$  -- Pulsatile FSH & LH
3. Peripheral (pseudo) prec. puberty:

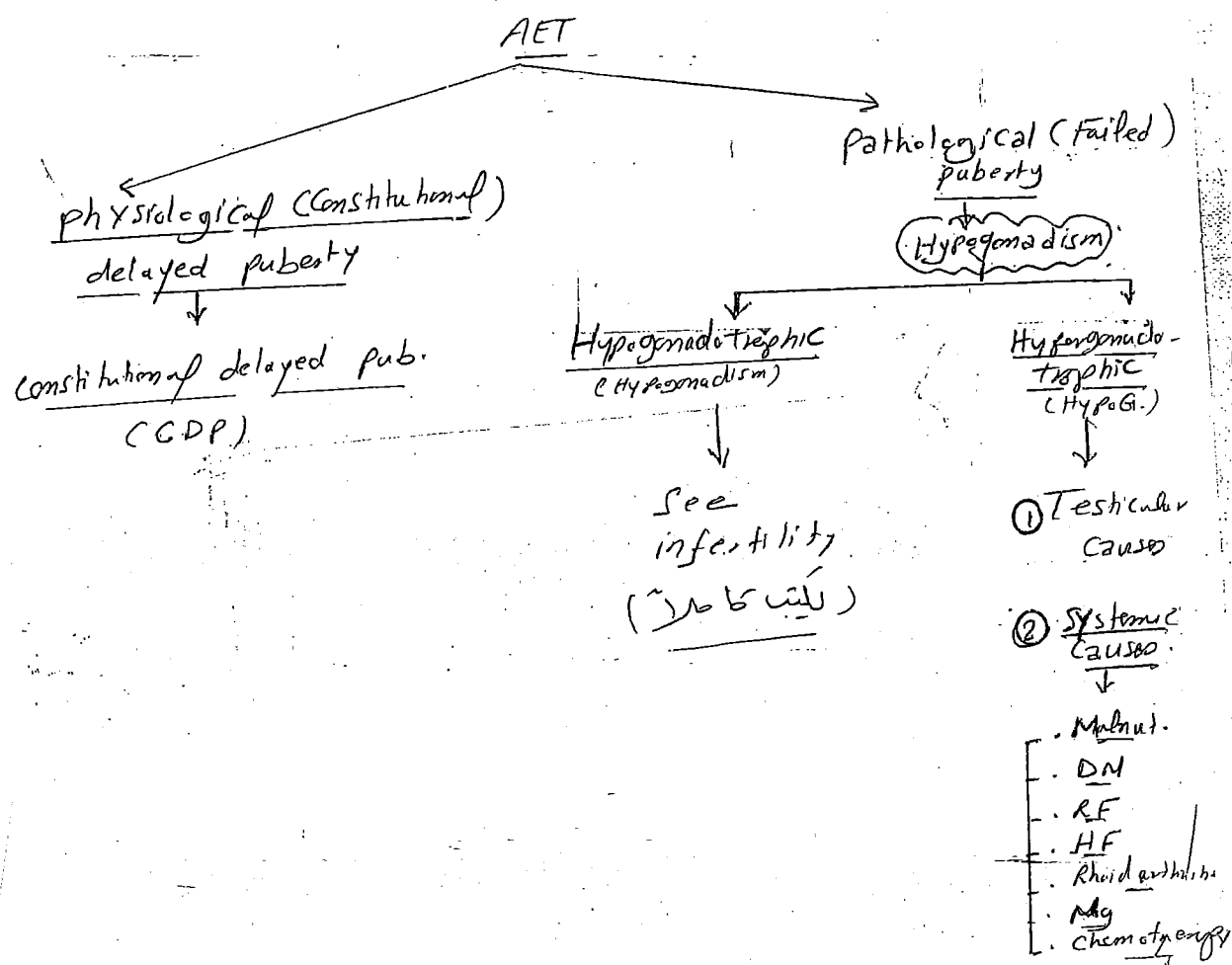


سؤال امتحان

# Delayed & Failed Puberty

Delayed Puberty: → delayed pubertal manifests, true age of 14 yrs & Test. Size < 4 ml.

Failed puberty: delayed pub. manifests true age of 21.



## Gynecomastia

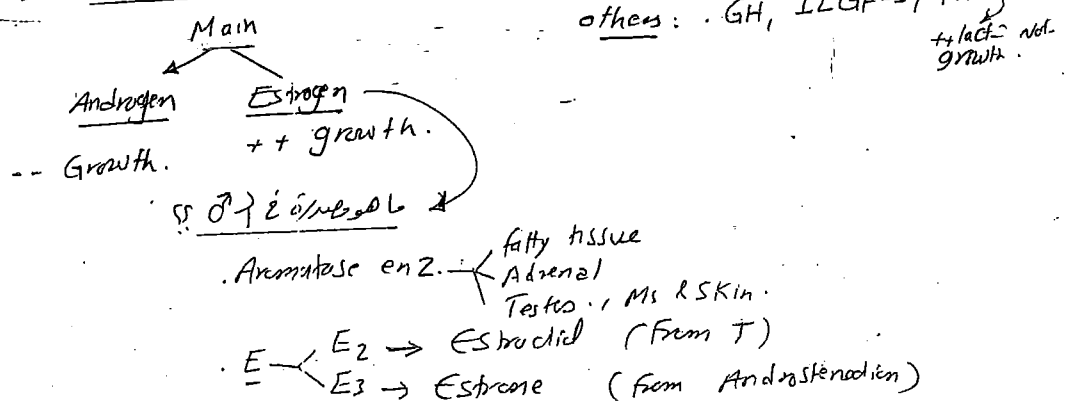
Def: Bg Enlargement of ♂ Breast d.t proliferation of Glandular Component

Pathophysiology:

1. Breast tissue composed of 3 Elements

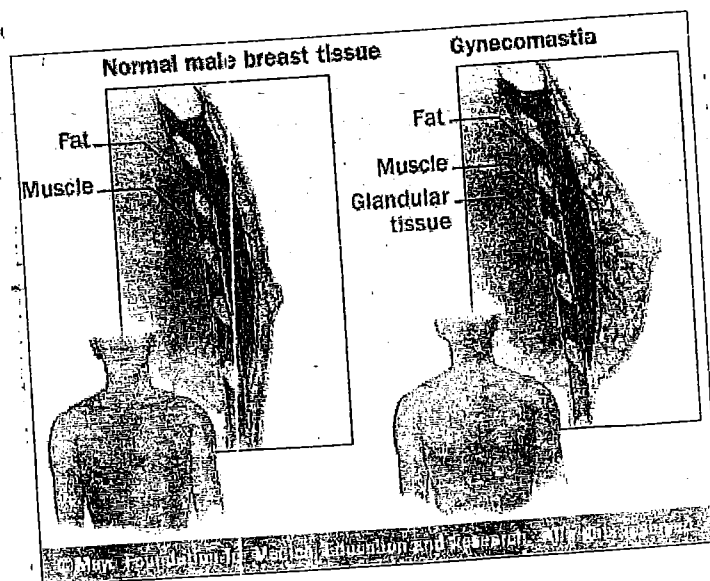
- Fatty tissue  $\leftrightarrow$  Gynecom.
- Glandular tissue  $\rightarrow$  lipomastia (Pseudo Gynecom)
- Muscular tissue

2. Hormonal effect growth of Breast



So disturbed T/E Ratio (NL: 300:1)  $\rightarrow$  Gynecomastia.

or d.t  $\uparrow$  Sensitivity of Breast to NL circulating E. (Ve In)



# Pathological Causes of Gynecomastia

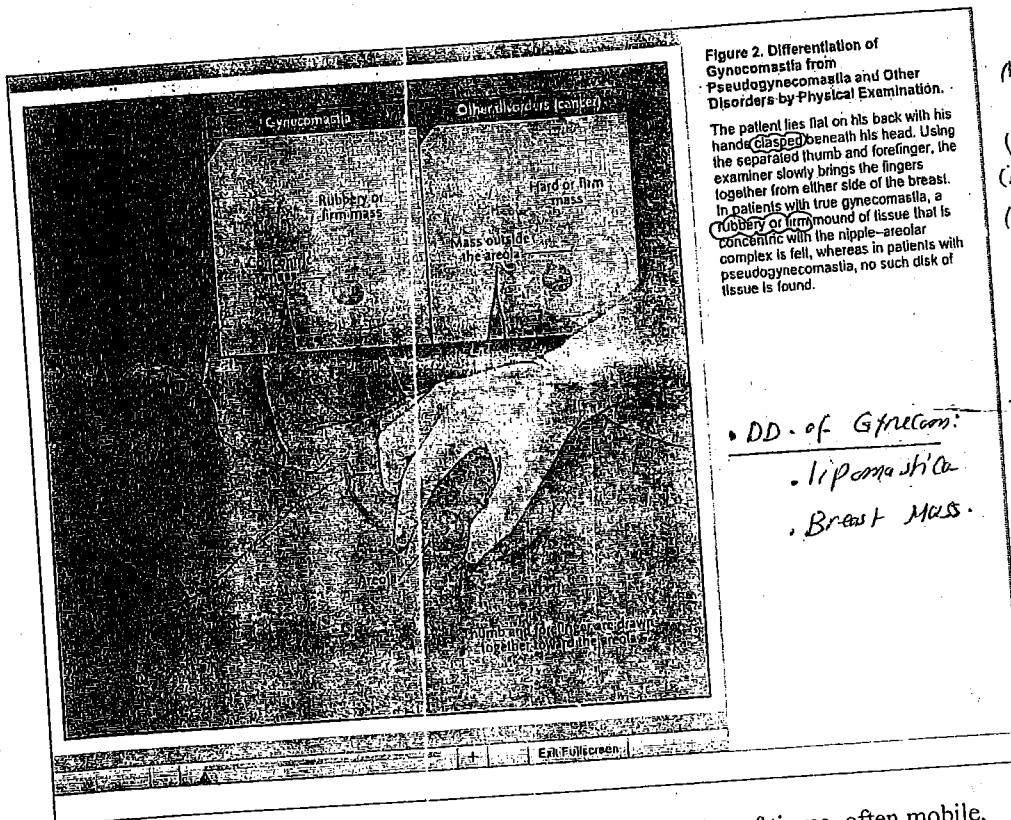
**Table 1**  
**Causes of Gynecomastia :**

<b>Endocrine abnormalities</b>	
Androgen resistance syndrome	Hyperthyroidism
Hyperprolactinemia	Hypogonadism
<b>Systemic disorders</b>	
Chronic kidney disease	Obesity
Chronic liver disease	
<b>Neoplasms</b>	
Adrenal	• Lung
Breast	• Testicular (Germ, Sertoli, Leydig, Chondiocarcinoma)
Liver	

↑ Aromatase  
↓ T  
↑ PRL  
↓ E-Clearance  
Alcohol → ↑ Steroids  
Geno...

- Drugs**
- 3 → Androgen Est. progest.
  - Fenestrins
  - Ketoconazole & Mefenidazole
  - Alcohol
  - Cimetidine
  - CCB
  - Alcohol
  - Amphotericin
  - HAART

## Examination of Gynecomastia (CIP)



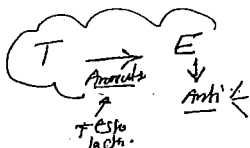
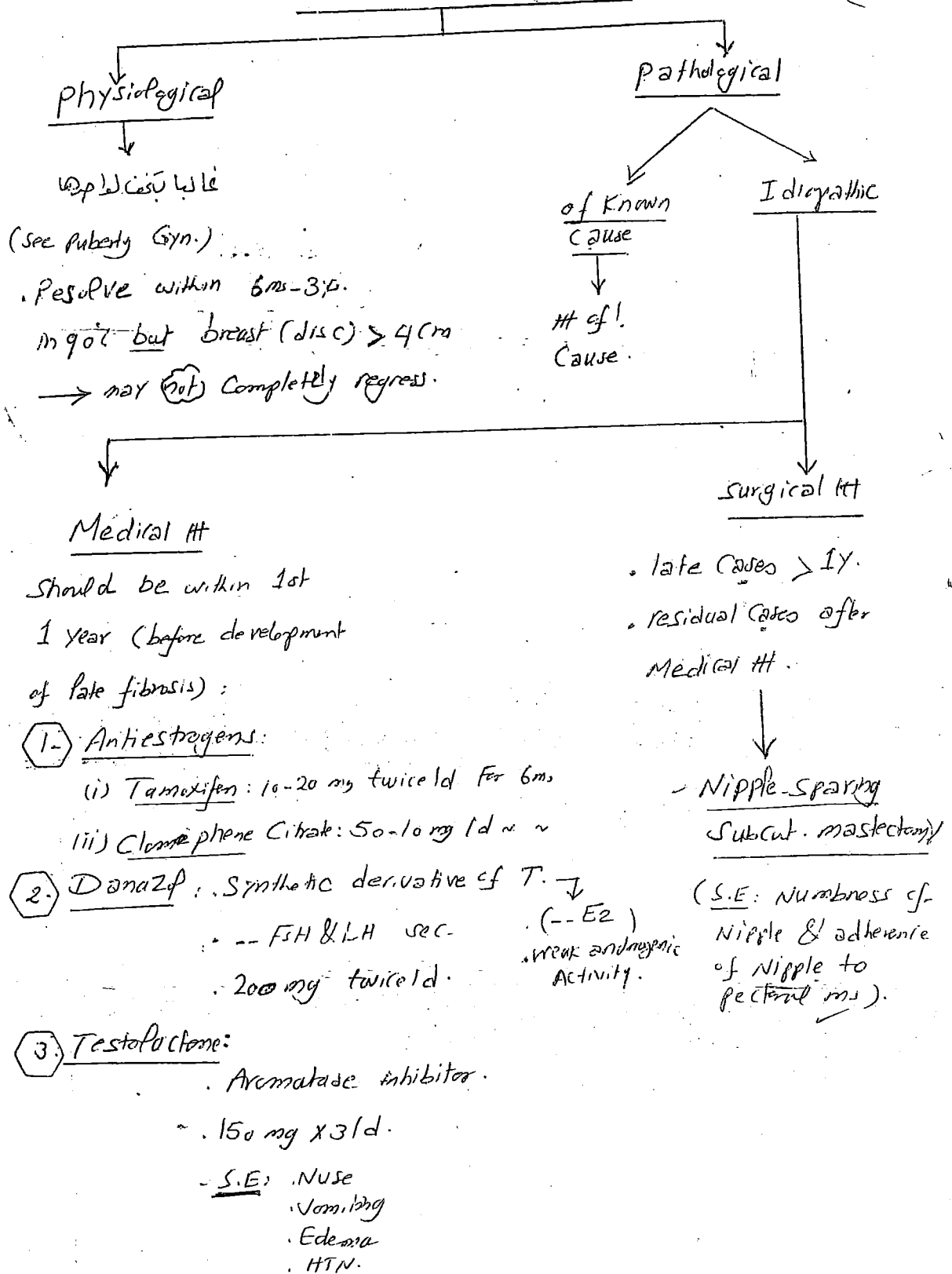
InvS  
↓  
CIP

- (i) Tot & Absent
- Tm → VLS
- (ii) ↑ PRL
- (iii) ↑ T<sub>3</sub>, T<sub>4</sub>
- (iv) Hypogonad.

Gynecomastia characterized by: concentric, rubbery-firm disc of tissue, often mobile, located directly beneath the areola while Pseudogynecomastia characterized by: absence of discrete (disk) mass.

→ "Lipomastia" (Trunkal obesity)

## Treatment of Gynecomastia



## Hemospermia (Hemospermia)

(44)

(Ref. AAFP 2009, EAU 2011, Emed 2010)

Def. Macroscopic appearance of Blood in Semen or ejaculate.

Pathophysiology (See Emed; Genital anatomy)

Types of Hemospermia:

1. True or Pseudo hemospermia.

2. Non persistent (single episode) & Persistent (continuous or recurrent)

General Considerations (44-48): «Hemospermia usually Idiopathic, usually Benign condition & usually resolve spontaneously so it is a trivial condition but Nevertheless it is often alarming for the patient & his partner» "أغضب"

### Causes →

Most Common Causes:

1. Idiopathic

2. Behavioral

3. Infectious

4. Traumatic

Systemic

Behavioral

Traumatic

Inflamm.

Infectious

Neoplastic

Vascular

Structural → prostatic

cytho  
prostatitis  
SV  
epididym.

Etiology	Typical presentation
<b>Behavioral*</b> Excessive sex or masturbation Interrupted sex Prolonged sexual abstinence	Isolated hemospermia episode triggered by particular sexual behavior
<b>Infectious*</b> Echinococcus (rare) Gram-positive and gram-negative uropathogens Mycobacterium tuberculosis (rare) [13%] Schistosoma (rare) Sexually transmitted infections: Chlamydia trachomatis; Neisseria gonorrhoeae; herpes simplex virus types 1 and 2 urethritis; urethral human papillomavirus (STDs)	Irritative genitourinary symptoms; urinalysis positive for inflammation; positive microbiology findings
<b>Inflammatory</b> Chemical epididymitis Interstitial, eosinophilic, proliferative cystitis Prostatitis Seminal vesiculitis Neoplastic Benign and malignant: tumors of the bladder, urethra, prostate, seminal vesicles, spermatic cord, epididymis, and testes	Irritative genitourinary symptoms; urinalysis positive for inflammation; negative microbiology findings
<b>Structural (any prostatic problem):</b> Ectopic prostatic tissue or prostatic polyps Intraprostatic Müllerian duct remnants Prostatic stones, cysts, benign prostatic hyperplasia Urethral stricture, fistula, diverticula	Voiding problems → Prost. ← cyst stones BPH
<b>Systemic</b> Amyloidosis Bleeding disorders Chronic liver disease Severe uncontrolled hypertension Trauma (iatrogenic) Hemorrhoid injections Penile injections Prostate biopsy, radiation therapy, brachytherapy, microwave therapy, transurethral resection of the prostate Urethral instrumentation Urethral stent migration	Hemospermia associated with systemic disease without other explanations
<b>Vascular</b> Arteriovenous malformations Bladder neck and prostatic varices, submucosal bleeding, hemangiomas, telangiectasias	Isolated hemospermia episode, or hemospermia associated with hematuria



# Algorithmic Approach For Management of

Hematospermia: (A&F + Med. Exam)

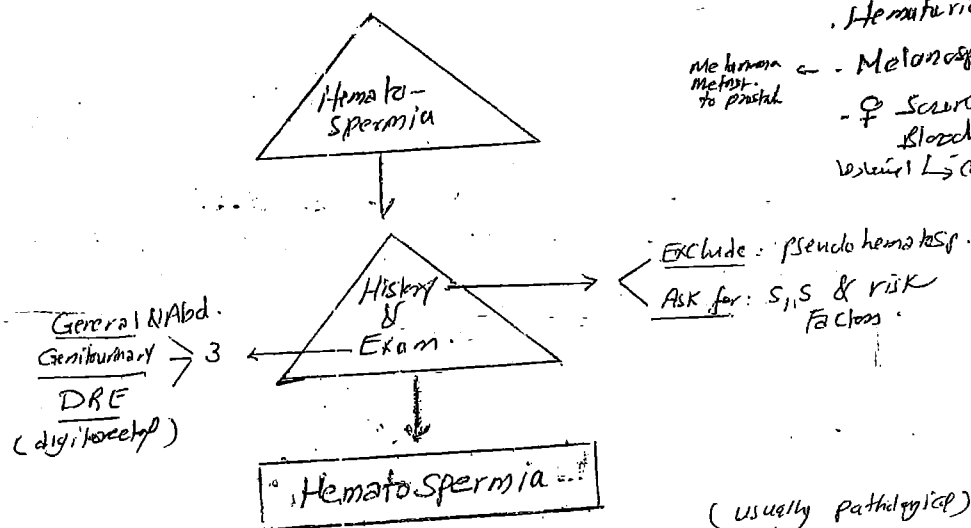
Pseudohematospermia:

• Hematuria

Me hemosa  
metast.  
to prostate

• Melanospermia

• ♀ Source of  
Blood -  
Vaginal Ls Cancer



usually  
Non-  
Significant

Non Persistent or low Vol.  
( $<2\text{ms}$  & or non recurrent)

$<40\text{y}$

DRE

Vital Signs

rule out  
Test. Cancer

$>40\text{y}$

DRE

PSA (??)

rule out  
Cancer prostate

High Vol, Persistent  
or recurrent ( $>2\text{ms}$ )

Ass. or  
S, S &  
risk factors

Full work up  
refer to urologist

(usually pathologic)

+ Hematuria

Evaluate:

UUT:

UIS

CT

IV -

pyelogram

LUT

Cystoscopy

(UUT - LUT  
= upper - lower  
urinary tract)

## Indications for Hematospermia Urology Referral (Based on symptoms):

- Hematospermia associated with genitourinary pain
- Hematospermia associated with unexplained voiding symptoms
- Recurrent, persistent, high-volume hematospermia

### Based on evaluation:

- Abnormal examination findings suggestive of tumor or structural problems
- Abnormal prostate-specific antigen findings
- Abnormal urinalysis findings (hematuria, sterile pyuria)
- Suspected foreign body, stent migration
- Suspected vascular malformation
- Based on lack of response to initial management:
- Symptoms or abnormal findings persist

## Treatment:

the 1st goal is to

- the 1st goal in management of Hematospermia is to allay the anxiety of a frightened pt.

→ Hematospermia: usually Idiopathic, Benign & resolve Spont.

- 3 Important factors in your mind:

1. Pt. Age.
2. duration & recurrence.
3. presence of any associated { S&S  
Risk factors  
Hematuria.

then Treatment is According to!

Cause: eg

1. HI of STDs.
2. deranging of! CxH
3. EDO! → TURED
4. Empirically Finasteride. ✓

# Intersex

Def.: Condition of sex disturbing in one or more

Genetic sex → ambiguous Genitalia  
Gonadal  
Phenotypic

Genetic & Gonadal  
+ Phenotypic  
disturbance

~ Goldstein  
Ambiguous genitalia

classified

Disorders of Ambiguous Ext. Genitalia

1. ♀ Pseudo hermaphrodite
2. ♂ " "
3. True Hermaphrodite
4. Gonadal dysgenesis
5. Gonadal Agenesis

Disorders of Male ext. Genitalia

1. Klinefelter
2. Sex Reversal Synd
3. XYY Synd
4. Persistent Mullerian duct Synd
5. Microphallid

Ambiguous Genitalia  
Hermaphrodite

♀ Pseudo

Commonest Cause of Ambiguous genitalia

Sex  
Genetic → ♀ (XX)  
Gonadal → ♀ (< ovaries)  
Phenotypic → ♂ (♂ like Ext. genitalia)

Pseudo  
Clitoral Enlargement  
Labiae large pigmented  
Scrotum fused

- AET
1. CAH (defective enz. of cortisol pathway)
  2. Maternal intake of virilizing drugs
  3. Maternal adrenal virilizing Tm.

♂ Pseudo

Sex  
Genetic → ♂ (46 XY)  
Gonadal → ♂ (Testes)  
Phenotypic → ♀ (♀ like Ext. genitalia)

AET → 3 Causes

A Defective Androgen Production

1. ♂ Pseudo CAH → deficient Enzymes of common pathways → ♂ Pseudo + AH  
desmolases (20 & 27)  
3 BHSD  
17 Hydroxylase

2. ♂ Pseudo only: deficient enzymes of Androgen pathway (desmolases [17, 20] & 17 BHSD)

Both ext. genital & Int. genital are affected

### B Defective Androgen Action: (Pseudo Vaginal Penoscrotal Hypospadias Synd.)

- Def defective  $5-\alpha$  reductase II enz.  $\rightarrow \downarrow$  DHT  
 $\rightarrow$  Feminization of Ext. Genitalia (depends on DHT)  
 [while the Mt. Genitalia are NL (depends on T.)]

- CIP: (1) Severe Hypospadias (penoscrotal)  
 (2) Variable fusion of scrotal folds (Vagina like)

- Diagnosis: (1)  $\uparrow$  T/DHT Ratio in response to GnRH inj.  
 (NL: 8-16/1 but in this disorder: 35:1)  
 (2) In ability of Genital skin to convert T  $\rightarrow$  DHT.

Note	T. dependent structures are NL	<ul style="list-style-type: none"> <li>Brain</li> <li>Breast</li> <li>ext. genitalia <math>\rightarrow</math> enlargem.</li> <li>int. " <math>\rightarrow</math> differential develop.</li> <li>Liver, ms, Testes.</li> </ul>	DHT dependant structures are AbNL	<ul style="list-style-type: none"> <li>Ext. Genital <math>\rightarrow</math> develop</li> <li>prostate</li> <li>SV</li> <li>Hair Follicles</li> <li>Seb. glands.</li> </ul>

note  
up

### C Defective Androgen Receptors: (Androgen resistance Synds = Androgen insensitivity Synds AIS = Testicular Feminization Synd.)

2 Types of AIS

• Complete AIS [CAIS]  
(Severe form)

- (1) Reifenstein Synd.
- (2) Lubs Synd.
- (3) Gilbert "
- (4) Rose Water "

• Partial AIS [PAIS]  
(less severe form)

- Severe Type
  - (1) Infertile male Synd. (IMS)
  - (2) Under Virilized fertile male Synd.

## A. Complete Androgen Insensitivity Syndrome: (CAIS)

Sex / Genetic ( $\sigma^+$ , XY)  
 Gonadal ( $\sigma^+$ : NL Testes but undescended)  
 Phenotypic: ♀:  
 ... vagina short & ends blindly.  
 ... Breast development.

بسیار کم دیده می شود  
 تکثیر و باروری ندارد  
 تخم بارور ندارد

(because surgery can't create penis  
but remove testicles)

## B. Partial Androgen Insensitivity Synd (PAIS):

Sex / Genotypic:  $\sigma^+$  (46 XY)  
 Gonadal:  $\sigma^+$  (Testes but Abd.)  
 Phenotypic: Ambiguous genitalia.

### 2 Forms of PAIS

#### Severe forms

- (1) Reifenstein Synd:  
 (Gynecomastia Hypospadias Synd.)
- (2) Lubs Synd: very feminine
- (3) Gilbert: ↑ Masculine
- (4) Rose Water: ↑↑ "

(severity of Feminization ↓  
 gradually).

#### Mild form

- (1) Infertile Male Synd:  
 (IMS):  
 • NL phenotype (but ↓  
 slight ↓ virilization).  
 • disturbed semen &  
 infertility  
 (↑ LH & T)
- (2) undervirilized fertile  
 Male Synd. (UVFMS):

NB

Diagnosis of  
AIS(A) Physical Signs:

- CAIS → ♀ with  $\left\{ \begin{array}{l} \text{Amenorrhoea} \\ \text{Testes} \\ \text{Sparse pubic \& body Hair} \end{array} \right.$ 
  - XY
  - Undesc. Test.
  - ♀ genitalia
- PAIS → Ambiguous genitalia

(B) Hormonal:

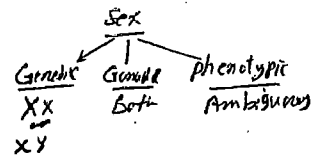
- FSH → NL (or slight ↑↑)
- LH → ↑↑
- T. → in NL (or) ↑↑
- E... → ↑↑

To differentiate Androgen Resistance from

→ deficiency: by HCG stim. test → ↑ Testost.• NL DAT (to diff. from 5 $\alpha$  reductase deficiency)(C) Karyotyping → XY

(D) ARs assessment: Quantitative & qualitative abn<sup>d</sup>  
Androgen Receptors in Thos<sup>e</sup> pts  
From Fibroblast cultures or  
Their genital skin.

# True Hermaphrodite



## Genetic Sex:

- 70% → XX
- 30% → XY or mosaic (XX/XY)

## Gonadal Sex: Both ♂ & ♀ Gonads (L.T.) (R.T.)

- one ovary at one side & one Testis on the other side

Commonest → Ovary & Testis on one side & ovary and Testis on the other side.

## Phenotypic Sex: → Ambiguous genitalia (but more masculine)

- Hypospadias
- undescended testis
- Labial Fusion

NB Int. duct develops Acc. to sides of Gonads

at <  $\begin{matrix} \text{ovarian side} \rightarrow \text{Fallopian tube} \\ \text{Testicular} \rightarrow \text{VD} \end{matrix}$

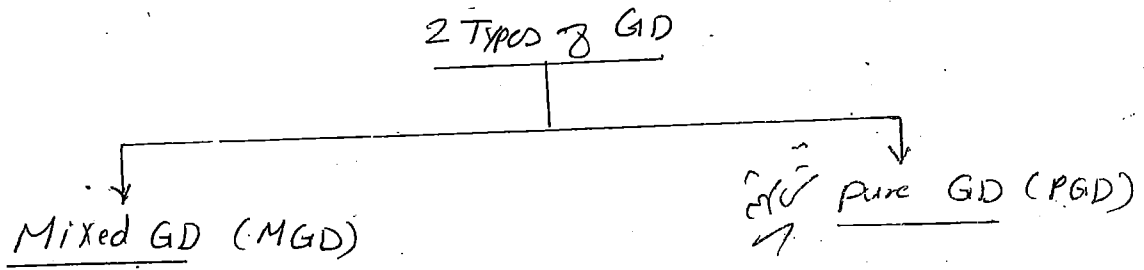
## → Better Reared as ♀s with preservation of ovarian tissues because ovarian component develop better than the Testicular.

Ovary testis:

Gonad if mixed ovarian Testicular tissues.

# Gonadal dysgenesis (Hyperplastic dysfunctioning gonads → streak gonads)

Def: reproductive system development disorder chr by progressive loss of primordial germ cells on The developing gonads of The Embryo → development of Severe Hyperplastic dysfunctioning gonads mainly composed of Fibrous Tissue; Hence the Name streak gonads.



## MGD

Genetic sex: either Male (46 XY) or Turner (45X0/46X)

Gonadal sex:  
 • at one side:  
   ↓  
   Testis  
 • Other side:  
   • streak gonads

phenotypic sex:  
 [ Ext. genitalia → Ambiguous.  
   physically → most are ♀ but ± ♂ ]

Treatment: Better Reared as ♀s:

why Gonadal EXCISE because non functioning  
 → in ♂ (XY)  
 → in ♀ (XY)

[ Hypospadia.  
 • Cryptorchidism  
   physically:  
   • Eunuchoid  
   • HL or  
   • Turner;  
   ↳ "clinically short"



empty testis - synd.  
[ testicular regrowth synd.

Genod of Agnensis  
(Vanishing Testis Synd)

but there is testicular regrowth  
at loss of vascular supply during intrauterine  
descent.

disorders of male ex +  
gonadotropia

① Klinefelter → male

② Sex Reversal Synd (XX Synd)

Karyotype → 46 XX ✓  
phenotype → male  
gonadomastia & hypospadias.

③ XYY Synd

47XYY

Posterior axis.  
Criminally antisocial behavior.  
Recently having NL fertility.

④ Persistent Mullerian duct Synd.

Failure of Foetal testes to produce (MIS)  
or failure of Mullerian duct to respond to it  
→ Persistent Mullerian duct that grows to

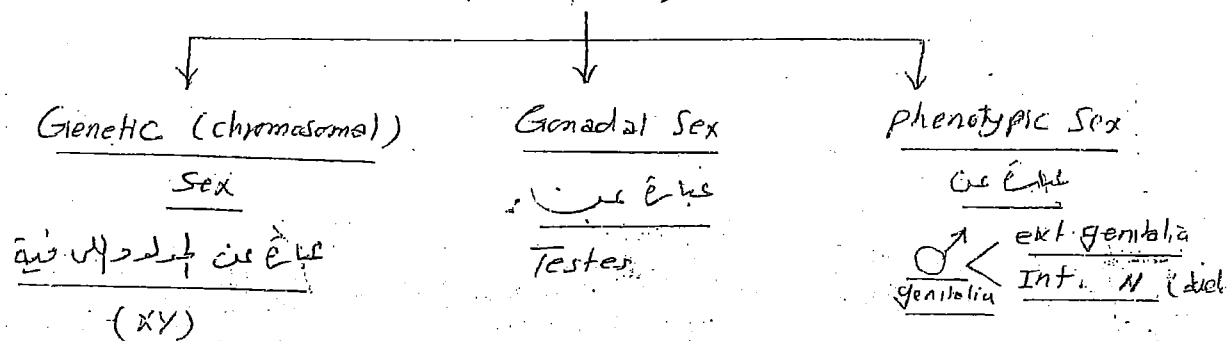
uterus & tubes.  
the baby is NL male & may be protected by ing.  
horms that contain ut. & tubes  
Great care should be taken to avoid vaginal  
injury as the vas is beside the tubes during  
Hemostasis.

# Embryology of ♂ Genital System

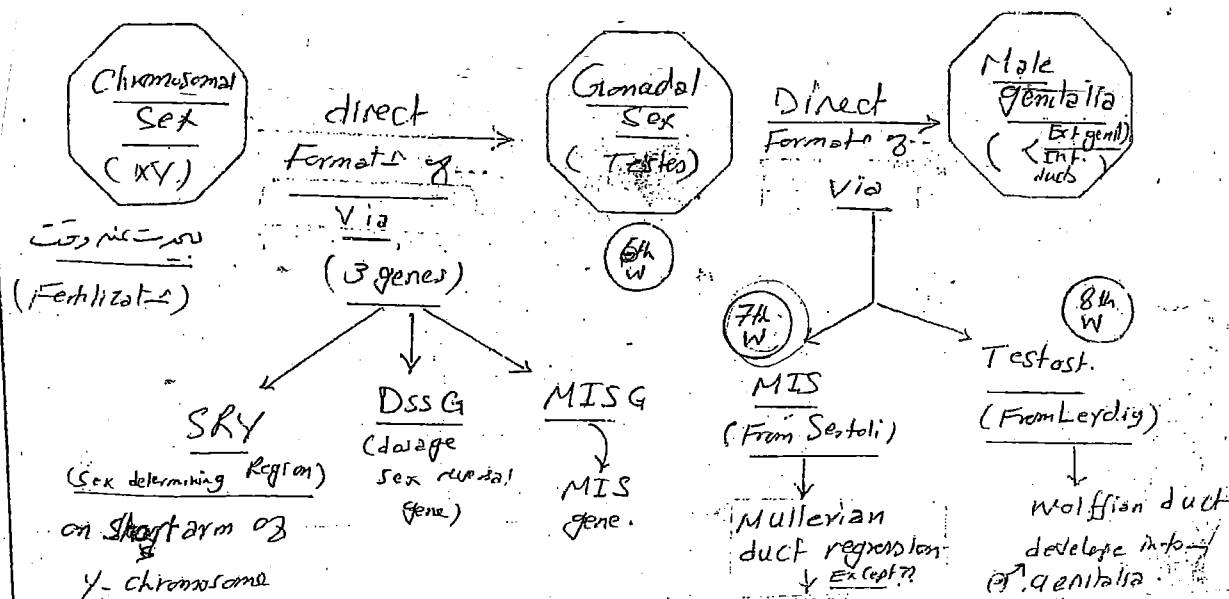
مراحل تطور الجهاز التناسلي الذكر

- ① Male Sex determination
- ② Sex organ development
- ③ Testicular descent

## Sex determination (Include 3)

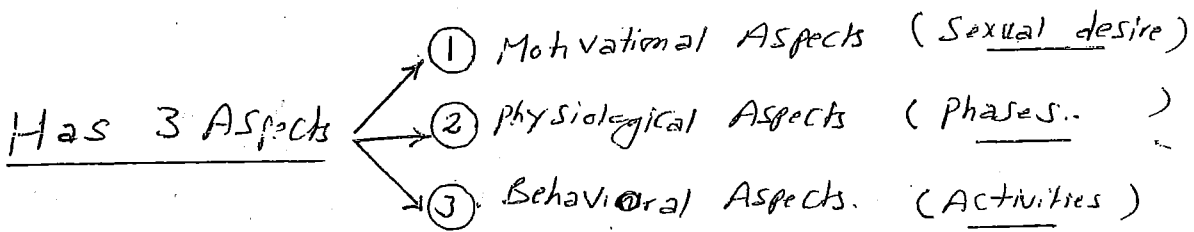


تحدد الجنس بمشرفي  
صلاواته



# Sexual Response Cycle (SRC)

(also)



(also)

## Sexual desire (SD) = Libido.

Manifests at 2 levels

Regulated by 2 Mechanisms

Central (Brain)

Peripheral (Genital)

- manifest inform emotional
- 8: sexual thoughts
- ① Sexual Thoughts
- ② Interest in initiate sexual Activity,
- ③ emotional state ready for love & sex.

SD manifested in genital organs inform of ↑ arousal ability to sexual stimuli.

Hormonal regulate

- Androgens
- prolactin

Neurological regulate

BY:

- ① Brain Area
- ② Brain Centers
- ③ Central Nervous system

Def of SD (Libido): Specific sensations to move the individuals to initiate or to receive sexual Activity.

## ② Regulation of SRC

### A. Hormonal Regulation BY:

#### Androgens

Most important H. that regulate

The SD in ♂ & ♀:

↑ SD  $\xrightarrow{\text{Ass.}}$  ↑ Androgens  
 $\xleftarrow{\text{leads to}}$

The small amount of Androgens in ♀ don't mean that they have low SD < Males but their sex centers are more sensitive than ♂s.

#### Prolactin

High level  $\rightarrow$  SD

$\rightarrow$  Psychogenic ED

Sex Therapy without

Correcting of

Hyperprolactinemia

$\rightarrow$  improve Erection.

### B. Neurological Regulation BY

areas  
Centers  
Transmitters.

#### Brain Areas

Cerebral Areas

Hypothalamic Areas

#### Brain Centers

pleasure & Pain Centers.

#### Central Neuro-Transmitters

Excitatory

Inhibitory

## Brom Areas

### Cerebral ④

limbic structures → Emotions & memory  
 Thalamic nuclei → Somatic Sensations  
 Hippocampus → Olfactory N.  
 Amygdaloid nucleus → -- SD

• if injured → Hypersexuality  
 (Kluver-Bucy Synd).

### Hypothalamic

2 Areas

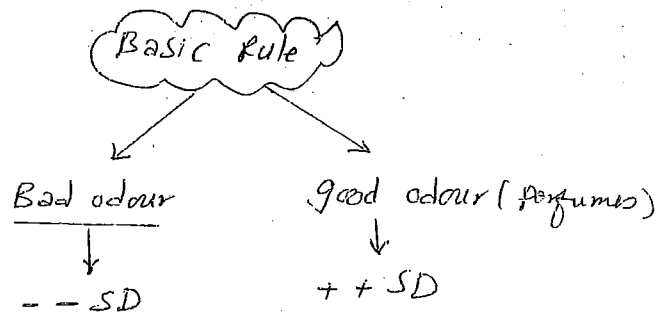
- ① MPOA: medial preoptic Area
- ② PVN: Para-Ventricular Nucleus.

↓  
 These are regulatory Station bet. Higher Cerebral centers & lower Spinal centers.

### NB Applied (Olfact. & SD)

- ① Pheromones: Chemical substances that secreted from animal's genitalia that attract the opposite sex through olfact.

- ② SD There is close relationship bet. the 2 Functions: Sexual & olfactory.



## • Brain Centers

توصيف مزدوج (Dual Steering Mechanism)



The above mentioned regulatory Areas may have  $\left\{ \begin{array}{l} \text{Neural or} \\ \text{chemical} \end{array} \right.$  Connections to Pleasure & Pain Centers

So: during Sex  $\left\{ \begin{array}{l} \text{Pleasure Centers are stimulated} \\ \text{Pain Centers are inhibited} \end{array} \right.$

Also: Pain  $\rightarrow$  -- Sex Centers.  
                     ↓  
                     Dyspareunia

• Applied  $\rightarrow$  Endorphins:

chemical substances similar to Morphine chemically.

Produced by brain cells  $\rightarrow$  ++ Pleasure Center  
 $\rightarrow$   $\left\{ \begin{array}{l} \text{Pleasure} \\ \text{Euphoria} \\ \text{relief of pain} \end{array} \right. \rightarrow$  all causes Pleasurable Sex. (++SD).

# Central Neurotransmitters

## Excitatory (2)

Oxytocin

+SD → Erect

Dopamine

Small dose

++ D<sub>1</sub> in PVN

++ SD & Erect

Large dose

++ D<sub>2</sub>

Ejaculation

SD / 5%

Sublingual Apomorphine Mechanism.

## Inhibitory (3)

Serotonin

Agonists as: → SD

SSRIs

Trazodone

(High dose) (6-8 mg/kg)

Antagonists: + SD

Trazodone

(Small dose)

(0.05-1 mg/kg/d)

Noradrenaline

++

α<sub>1</sub>

++ SD

α<sub>2</sub>

-- SD

So

Agonists: as

Clonidine → ↓ Erect

Antagonists as

Yohimbine → ↑ Erect

α<sub>2</sub> Blocker

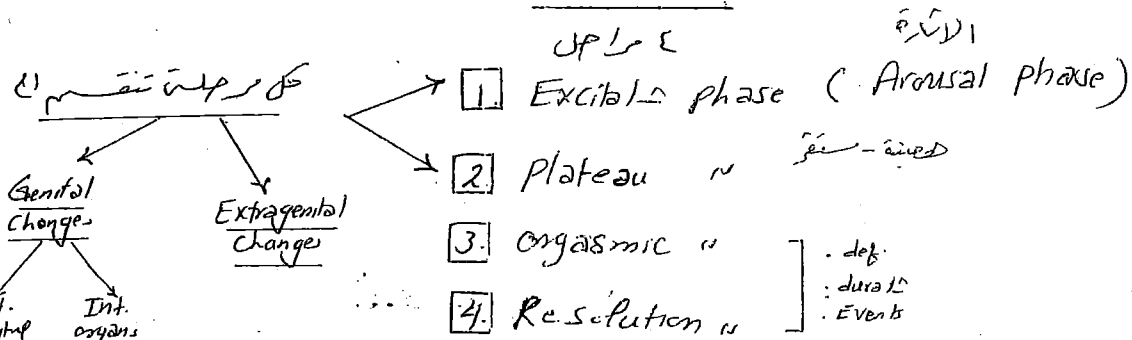
Opoids

↑ SD  
Naltrexone → ++ SD

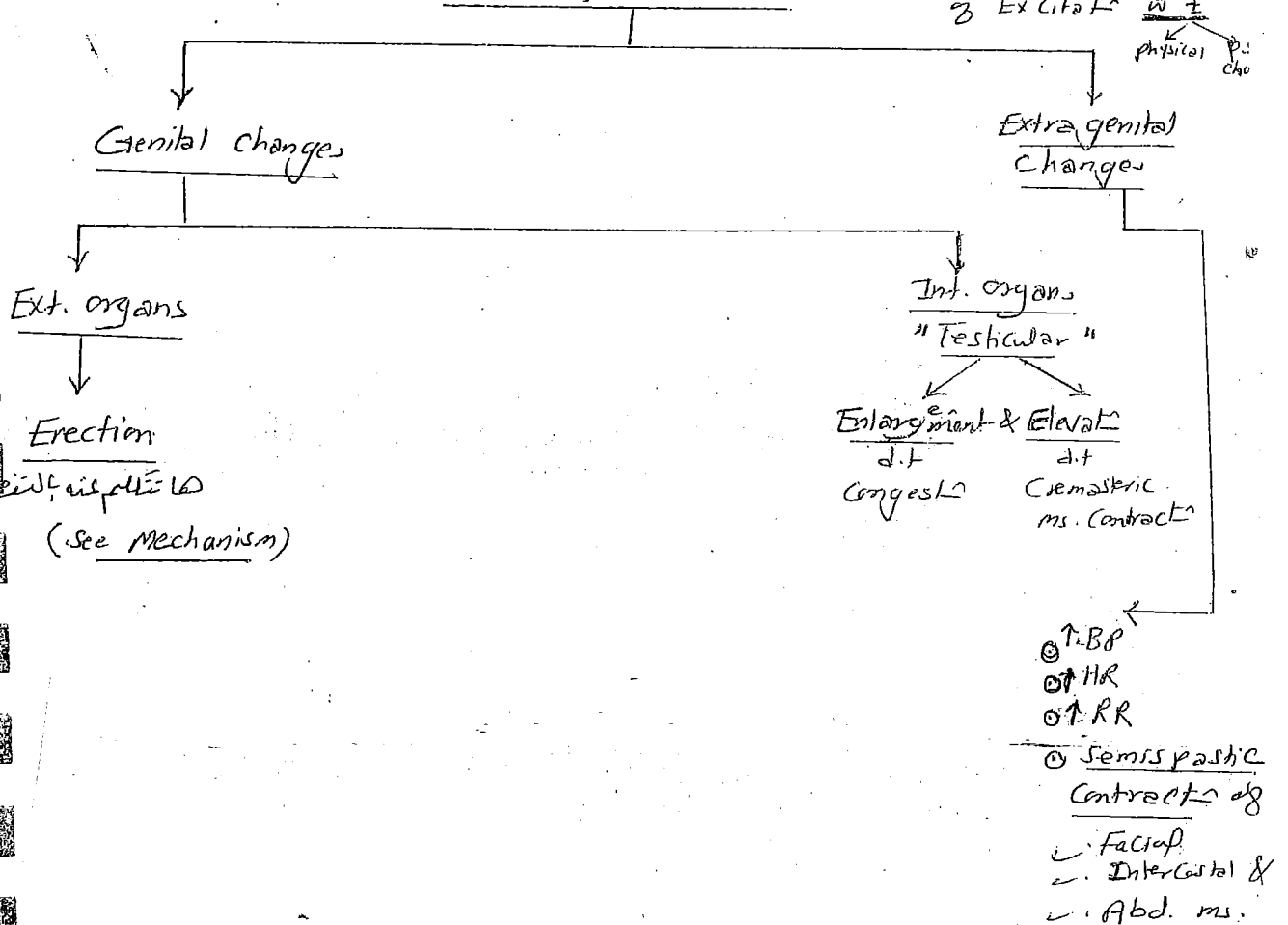
2 Hormones: < Androgen → ++ SD  
prolactin → -- SD

2 Neurotransmitter: < Serotonin → -- SD  
Dopamine → ++ SD (from 40% SD)

# Phases of Sexual Response Cycle in Males

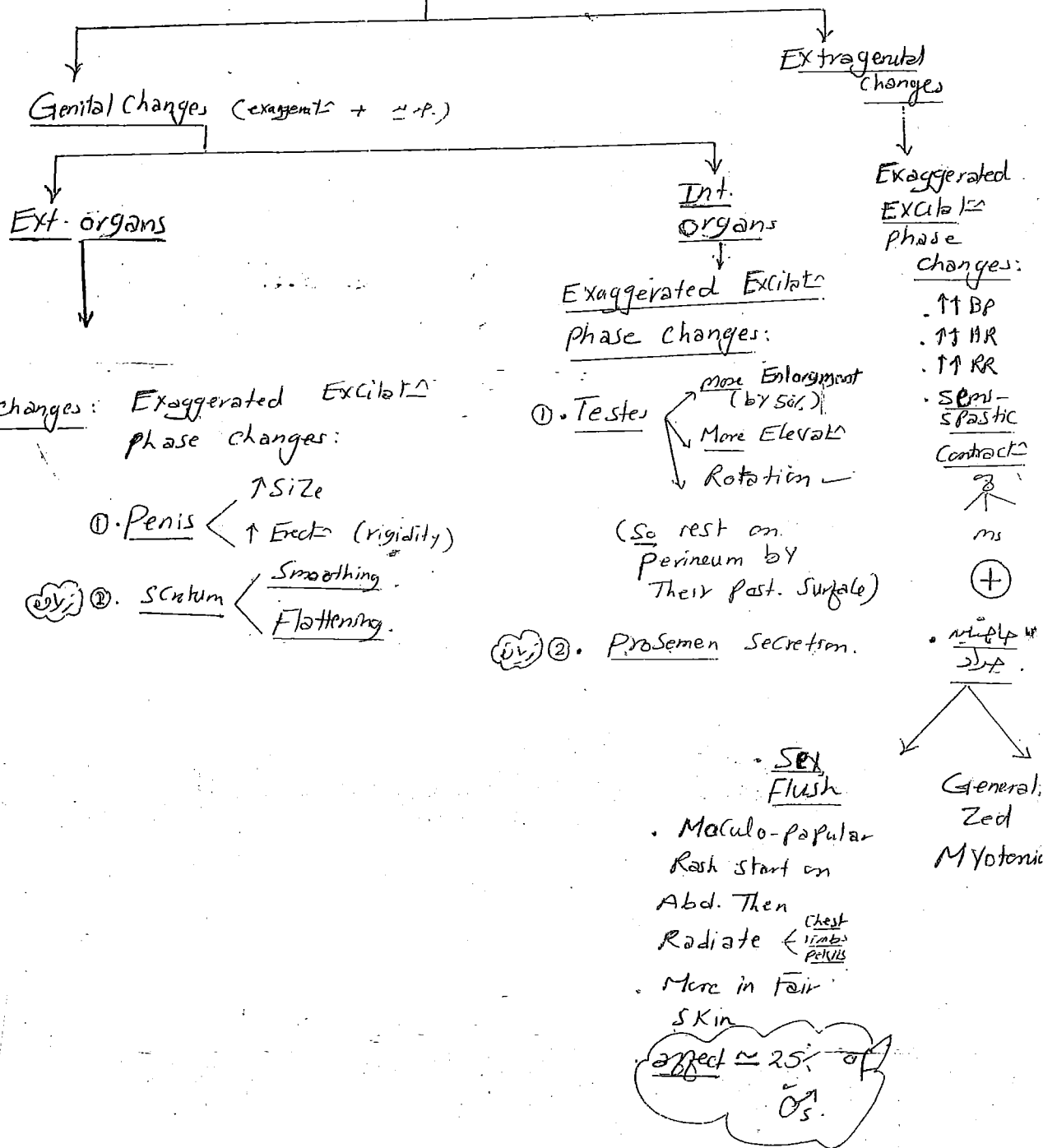


## ① Excitation phase (onset: 10-30 sec. From onset)





## ② plateau phase: duration: 30 sec - 3 min



### ③ Orgasmic phase (orgasm + ejaculate)

Def. : orgasm is a cerebral event of intense pleasurable sensat<sup>n</sup> that occurs simultaneously with genital event of Ejaculat<sup>n</sup>.

duration : Few seconds →

أقصر فترة زمنية

Events :  
as plateau + Ejaculat<sup>n</sup>

Genital → Ejaculat<sup>n</sup>  
Extragenital → as in plateau

كامله فيه  
النبض !!

### ④ Resolution phase

Def. reversal of all genital & Extragenital changes that occurred during the previous phases.

duration : if There was :

orgasm :

No orgasm

durat<sup>n</sup> : 10-15 mins

durat<sup>n</sup> : 10-15 hrs with sense

if changes resolve

Sense of well being

Exhaustion  
depression  
pelvic pain

Events : [A] Resolution of Extragenital changes & Genital changes → Detumescence : 2 phases :

Resolut<sup>n</sup>    Refractory period

① 1st = Fast : orgasmic contract<sup>n</sup> → pump of blood outside the penis → Partial detumescence

② 2nd = Slow : genital blood flow returns to the base line (unaroused) → Complete detumescence

Resolution phase is  
Followed by



[B] Refractory period

Def: Period of time after the orgasm during which  
Further Sexual Excitation &/or orgasms are  
impossible

duration: Few minutes - few hrs or day.

↑↑ in the Following Conditions

↑ Aging  
↑ No of ejaculations in a period of time.

ch: it's the most important & chic  
Feature of Resolution phase.

NB the shortest phase is  
The Most chic phase in OT.

NBs: Orgasm without ejac. → see Orgasmic

Anejac. (3 failure)

Gushers (prepubertal Boys experience orgasm with genital stim)

Ejaculate without orgasm → "See infertility".  
e.g. "orgasmic Anhedonia"

Orgasm without refractory period: Seen in pts with  
micropenis d.t. Androgen Insensitivity Ch by:

- ① Multiple orgasms.
- ② No ejaculate.
- ③ No Refractory period.

Refractory period without orgasm: (Paradoxical  
Refractory period)

in NL individuals: if ejaculate delayed →

Excitation phase prolonged → Erection become less rigid. →  
regaining Erection again &

in some men > 50 y → Failure of Regaining rigid  
Erect → So:

- No ejaculate.
- +ve Refractory Period.

# Female Sexual Response Cycle

دورة و

1. Excitation phase.
2. plateau phase.
3. Orgasmic
4. Resolution

دورة و

Genital changes

Extragenital changes

Int. organs.

## 1. Excitation phase

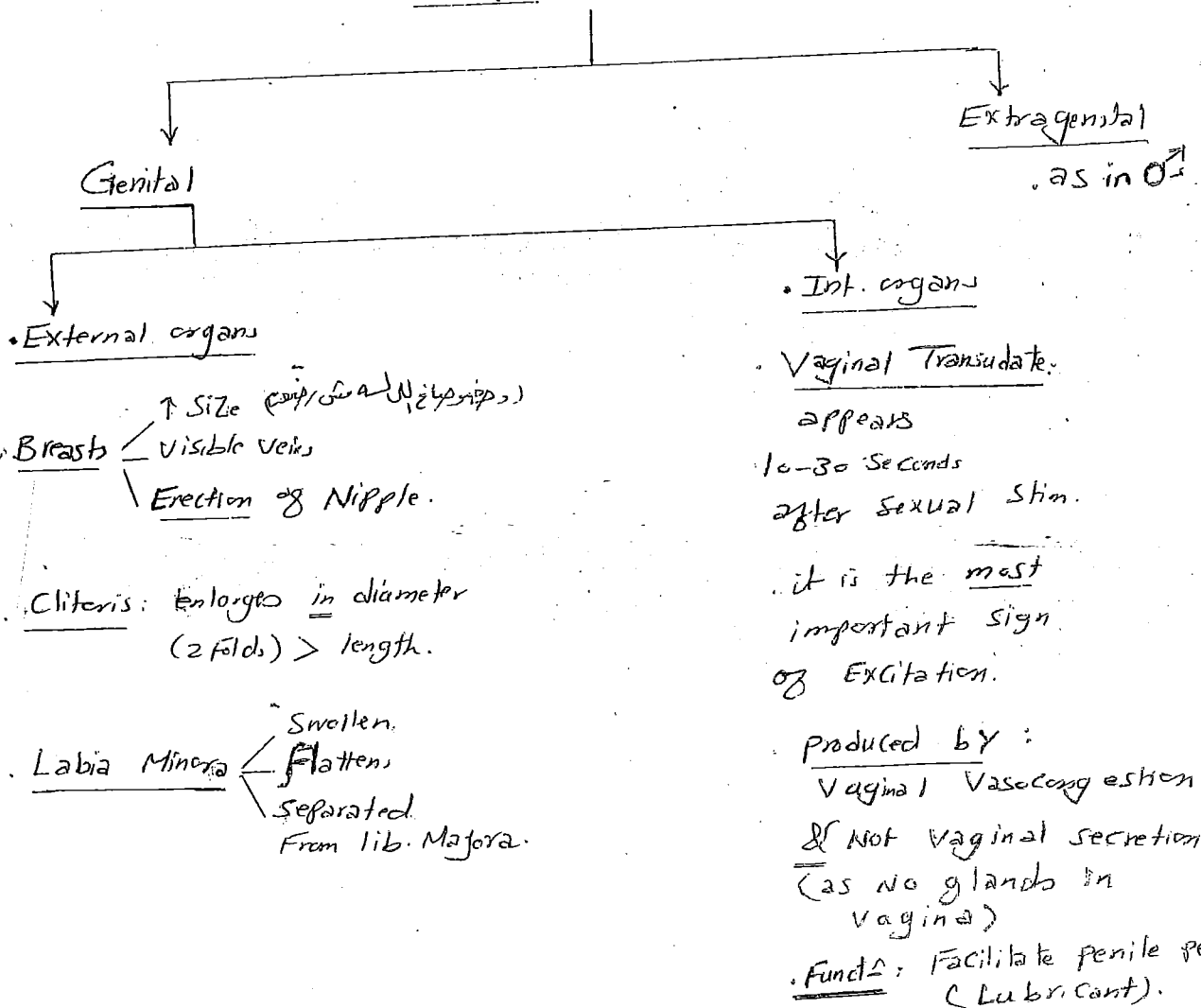
onset: 10-30 seconds following Initiation of Sexual Stim

changes

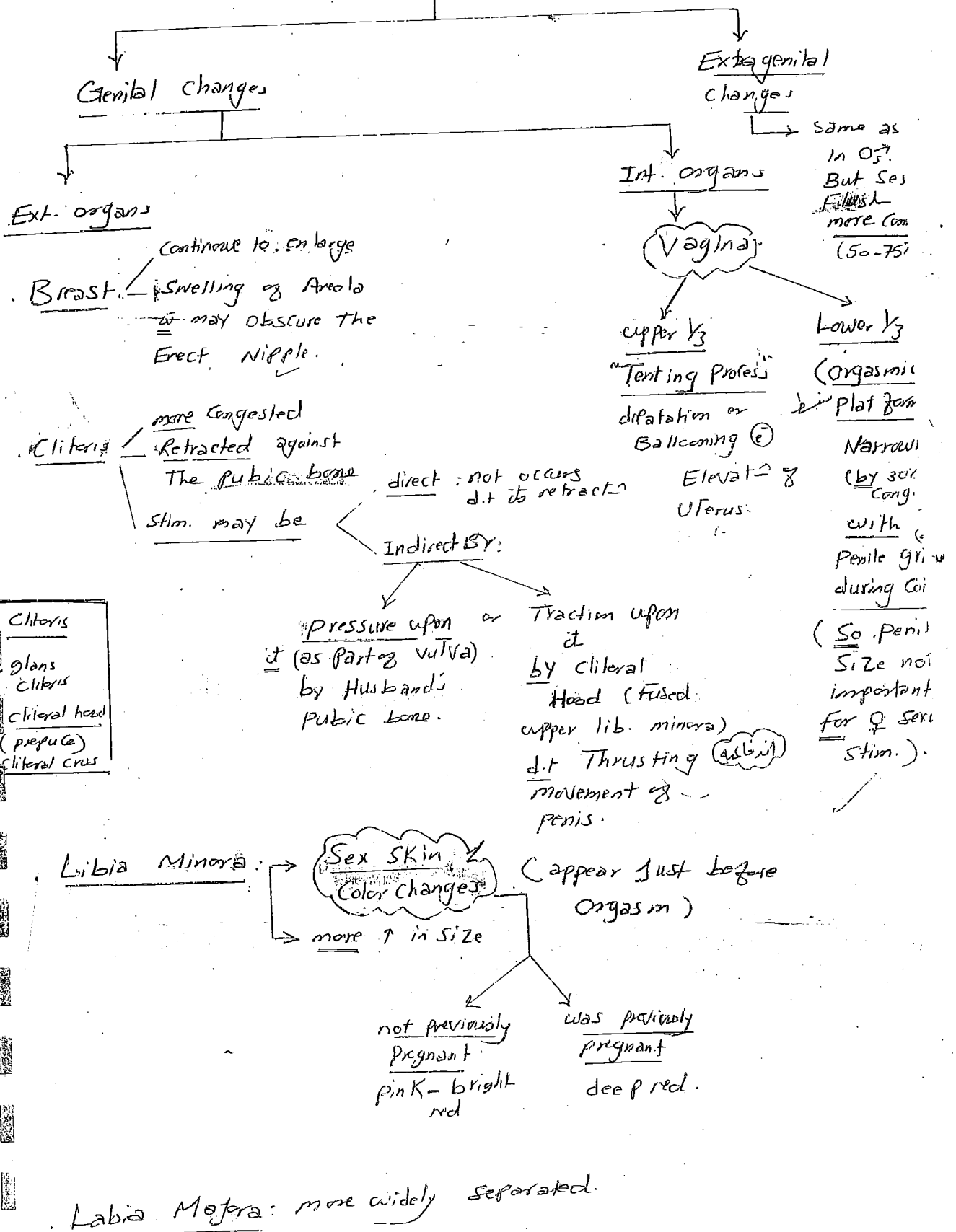
شدة لرج

physical  
psychological

شدة المرأة



## ② plateau phase



### ③ Orgasmic phase

Genital changes: (cf BY)

Extragenital changes

as in Os.

① Rhythmic   
 ↳ Perineal  
 ↳ anal  
 ↳ vaginal  
 ↳ uterine →

ms. Contract (5-15 at  
 0.8 sec.  
 Interval)

② Momentary cessat<sup>n</sup> of  
 Consciousness Followed  
Immediately by

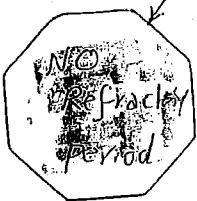
Intense sensual awareness of the  
 clitoris that radiates upward into  
 penis ass. & sense of bearing down or  
 Expelling.

③ Sensat<sup>n</sup> & Warmth moving From the pelvis to  
 The whole body

④ pelvic Throbbing: Sensat<sup>n</sup> of ms. contract<sup>n</sup> in  
 Vagina & pelvis.

⑤ Involuntary Vocalizati<sup>n</sup>  
 desine of clenching  
 after play.

### ④ Resolution phase



Resolution of All above mentioned changes

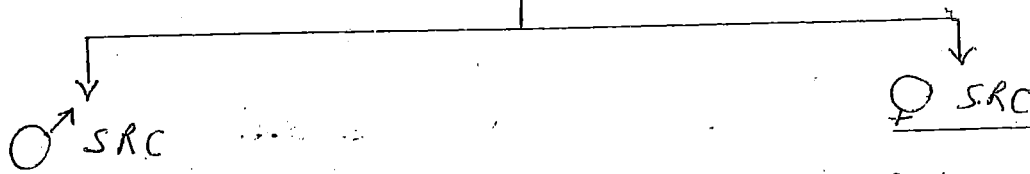
The most char<sup>ic</sup> is NO Refractory period so ♀ is  
 multiorgasmic when there is stimulat<sup>n</sup>.

if orgasm doesn't occur will be prolonged & pelvic t

## Some NBS on Sexual Response Cycle.

سوال نمبر

### 1. Effects of Aging on Sexual Response Cycle:



• Excitatory Phase → ↑↑  $\bar{e}$   $\left\{ \begin{array}{l} \text{Need for direct} \\ \text{genital ++ \& } \\ \downarrow \downarrow \text{Rigidity} \end{array} \right.$

• Plateau: ↓↓ (d.t. less ejaculatory control)

• orgasmic: ↓↓ (d.t. ↓ Ejaculatory Vol.)

• Refractory period: ↑↑ (d.s. - w.s.)

(i). Excitation Phase:

↓ vaginal lubrication  
→ dyspareunia.

(ii). plateau phase:

↓ Breast size

↓ sex Flush

(iii). orgasmic: Pain

in ass. & UT  
contract.

### 2. difference bet ♂ & ♀ SRC

سوال نمبر

Phase	♂ SRC	♀ SRC
1. <u>Excitatory phase</u> :	<ul style="list-style-type: none"> <li>Excitation mainly physically &gt; psychologically (♂ can be attracted to many attractive ♀)</li> <li>Penile Erection</li> </ul>	<ul style="list-style-type: none"> <li>Excitation mainly psychologically</li> <li>(♀ psychologically attracted to one male only).</li> <li>Vaginal lubrication &amp; swelling + Erect<sup>NMRL</sup> of <sup>Arclia</sup></li> </ul>
2. <u>orgasmic phase</u>	Ejaculation	No Ejaculation (Transudate)
3. <u>Resolution phase</u>	<ul style="list-style-type: none"> <li>Refractory Period (♂ is unorgasmic &amp; Refractory Period)</li> </ul>	<ul style="list-style-type: none"> <li>No refractory Period (♀ is Multiorgasmic <sup>out</sup> Refractory Period).</li> </ul>



3. Basic Rule → (Clitoral stim.) is an essential event in most Healthy mature Females To reach orgasm.

جبرائيل  
(190-)

4. G. Spot: localized spot in Ant. vaginal wall (1-3 inches from its opening) that has special Erotic Sensitivity. (نقطة حساسة)

5. ♀ Sex Flush & Sex Skin

Maculopap.  
rash.

Color changes That occur at Breasts & Abdomen

during < Excitatory & plateau phases.

Color changes of skin of labia minora during plateau just before orgasm.

6. ♀ Erection & Ejaculation

- a. Nipple
- b. Clitoris
- c. Vagina: Cong & Expansion (Int. Eject)

was thought that it is secretion from urethra during Excitatory as Skene's secretion but this proved as urinary incontinence &! Accepted term is: Vaginal Transudate Not Ejaculation.

# Behavioral Aspects of Sexual Response Cycle

## Non Coital Activity

A  
B  
C

### A Non Genital Touching

- Hand touching
- Body Holding
- Cuddling (vlic)
- Kissing

representative < love symbol  
sex actual

### B Genital Touching

#### ♀ genital Touching

#### 1. Clitoris

##### Head (tip)

better not rubbed because is so sensitive

Irritate & Uncomfortable

(Sp. early stages erot Lubricate)

##### shaft

→ firm sustained rubbing directly or indirect by

(solid) (cushion)

#### Covering

Vaginal lips

mons

Perineum

#### ♂ genital Touching

#### Penis

##### Flaccid

light stroking

preferred

Vigorous Stroking

→ Performance Anxiety

##### Erected

##### shaft

Firm up & down stim. f Hand around it → good

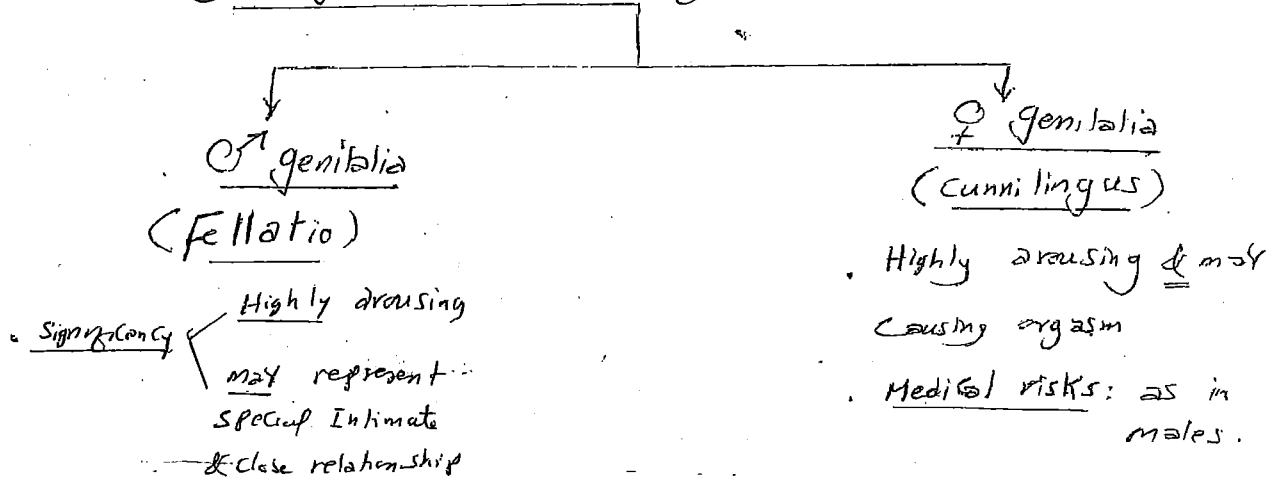
##### Glan

oversens & imitate if there

#### 2. Vagina:

preferred only during high level of Sexual Arousal.

③ orogonikal stimulat<sup>n</sup> og:



• Risk: No medical risk

ع

- ①. Orogenital contact is Hygienic as mouth to mouth kissing

& (2) Natural genital secretions are relatively clean

### Coital Activities:

Coitus ① duration 5-20 min; Variable

occurs acc. to ; Age, race, physical Fitness,  
drug Therapy & partner relationships

African  
American

← (2) Frequency

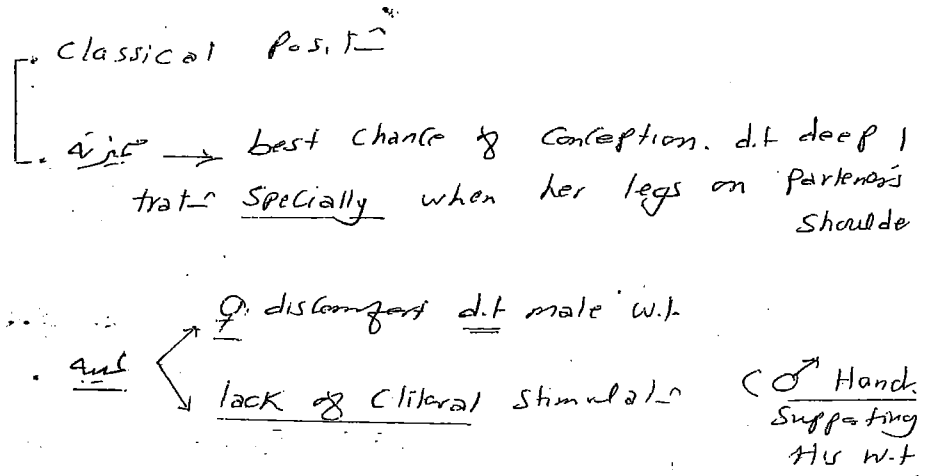
30-40 yrs  $\rightarrow$  3-4/w.

South  $\rightarrow 1.8 \text{ W}$ .

60 th  $\rightarrow$  1.3 / w.

③. positions;

## ① Male Superior position: (missionary position):



## ② Female Superior Posit<sup>n</sup>:

Common in highly Educated Couples (that accept it)

Adv<sup>t</sup> maximal clitoral stimulation  
Achieved by

♀ ability  
To control  
Her pelvic  
movements

♂ Hands to  
are free.

So Suitable For ♀ with → late pregnancy  
Orgasmic  
dysfunction.  
Kary → ♀ P.E. or Heart disor  
pelvic steep synd.

Disadv<sup>t</sup>: Psychological discomfort for some men  
(Superior.) لأنه لا يتقبل فكرة أن يكون المرأة فوقه

### ③ Side to Side position:

Partners Facing each other by Lying on Their Sides

Adv : Both Partners are relaxed with Free hands for more Stim. during Inter Course.

Dis  $\left\{ \begin{array}{l} \text{difficult penile intromission} \\ \text{less free penile Thrusting movements} \end{array} \right.$

3/3

### ④ Rear Entry position:

Vaginal penetration when the man Faces the back of woman who may lie on her face or on her side.

Adv  $\left\{ \begin{array}{l} \text{Additional Stimulate by Free Hands} \\ \text{suitable: For } \text{♀} \text{ in late pregnancy} \end{array} \right.$

Dis  $\rightarrow$  lack of Eye contact.

OK ~ NL

# Sexual pain disorders (Vaginismus and Dyspareunia)

Vaginismus  
Dyspareunia

## 1- Vaginismus

Def. Involuntary spasm of the muscles of:

- outer 1/3 of Vagina
  - Levator ani
  - Perineal ms.
- & in severe cases → gluteal ms. & Thigh Adductor

occurs on any attempt of vaginal penetration either during coitus or genital

Exam.

Complications: Frustration of Both

despite Exuberant lubrication

Impotence → asymptomatic asymptomatic asymptomatic

Husband & wife

Frustrated & Feelings of Sexual inadequacy & Fears of rejection by Husband.

Note that The ♀ has NL

Exuberant lubrication

organ

## Causes

Psychogenic (See Psychogenic ED)

Organic

1. Developmental
2. Cognitive
3. Neurotic (Affective)
4. Interpersonal

Natural "protective" reflex of pain Experiences or Anticipated during Coitus

1. Clitoral Causes
2. Vaginal opening Causes
3. Intra vaginal Causes

# Organic Causes of

## Vaginismus

### 1. Clitoral:

Female  
Genital  
Mutilation

- FGM → adhesion
- Chr. irritate by accumulated smegma
- Rough manipulation is insufficient lubrication

### 2. Vaginal Opening:

- 3, 4
- Inf.
    - Infected or Lacerated remnants of Hymen.
  - Ulcer
    - Genital ulcers
  - Menopause
    - Menopausal woman is shrunken inelastic Vagina.
  - CD

### 3. IntraVaginal:

- Vaginitis
- Infective: Candida & Trichomonas
  - CD: douches, Contraceptives & Condom
  - Atrophic: Menopausal (d.t ↓ Estrogen)

### 4. Uterine:

- Endometritis (Menopausal)
- Cervitis & Cervical Erosion
- Uterine Spasm by Seminal PGs. (rare)

### Treatment

Organic  
Causes

H & C Conc.

Psychogenic

Sex therapy (for  
Nailby)

+

Gradual vaginal  
dilatation program

## Gradual Vaginal dilator Program

خطواته كالتالي :

1. تقوم بدرجة مشابهة Vaginal opening باستخدام مرآة بومبا
  2. تقوم بإدخال الأصبع ببطء في Hegar dilator ولكن يكون Lubricated
  3. تضع اصبعين ثم ثلاثة
  4. تقوم الزوج بإدخال التفتيش بمرح مع احتلام Lubricant مع تجنب أي ثوة أو Thrusting
- دورة نجح —————> Intromission tip  
 orgasm is allowed.



**A** Dyspareunia  $\begin{matrix} \text{♂} \\ \text{♀} \end{matrix}$  = Genital pain during Coitus   
 Coitus  $\begin{matrix} \text{Persistent \& Recurrent} \\ \text{Auss.} \end{matrix}$

Def Persistent & recurrent pain during Coitus in genital organs of males & Females; usually ass. with marked distress & Interpersonal difficulty.

• Causes:  $\begin{matrix} \text{♂} \\ \text{♀} \end{matrix}$  dyspareunia;

♂   
 : Penile Pain??   
 (فقدان آفة)

Excessive manipulation

- Trauma to penis
- Fracture penis
- Priapism (??)
- PD, (ICI)
- Herpes
- Reiter's.
- Sickle Cell an.
- Cancer

Onset

- STD.
- Urethritis.
- SJS.
- BD.
- Pemphigus.
- L.P.

- Balanitis  $\rightarrow$  (التهاب اذني)
- Urethritis  $\rightarrow$   $\begin{matrix} \text{ST} \\ \text{Non ST} \end{matrix}$   $\rightarrow$  (التهاب مجرى)
- Vesiculitis
- prostatitis (Commonest).
- prostatic dysnia.
- Inadequate vaginal lubrication.

♀ Causes:

**A** Psychological Causes:

(FAT)

Fear, Tension & Anxiety related to Coitus; so may  $\rightarrow$  Insufficient Vaginal lubrication or some spasm in perivaginal muscles  $\rightarrow$  difficult penile penetration  $\rightarrow$  Dyspareunia.

**B** Organic Causes  $\rightarrow$  (AS) Vaginismus.

♂ Dyspareunia = Dyspareunia Cause + Cause of penile Pain.

اضطراب انسا

# Female orgasmic disorders

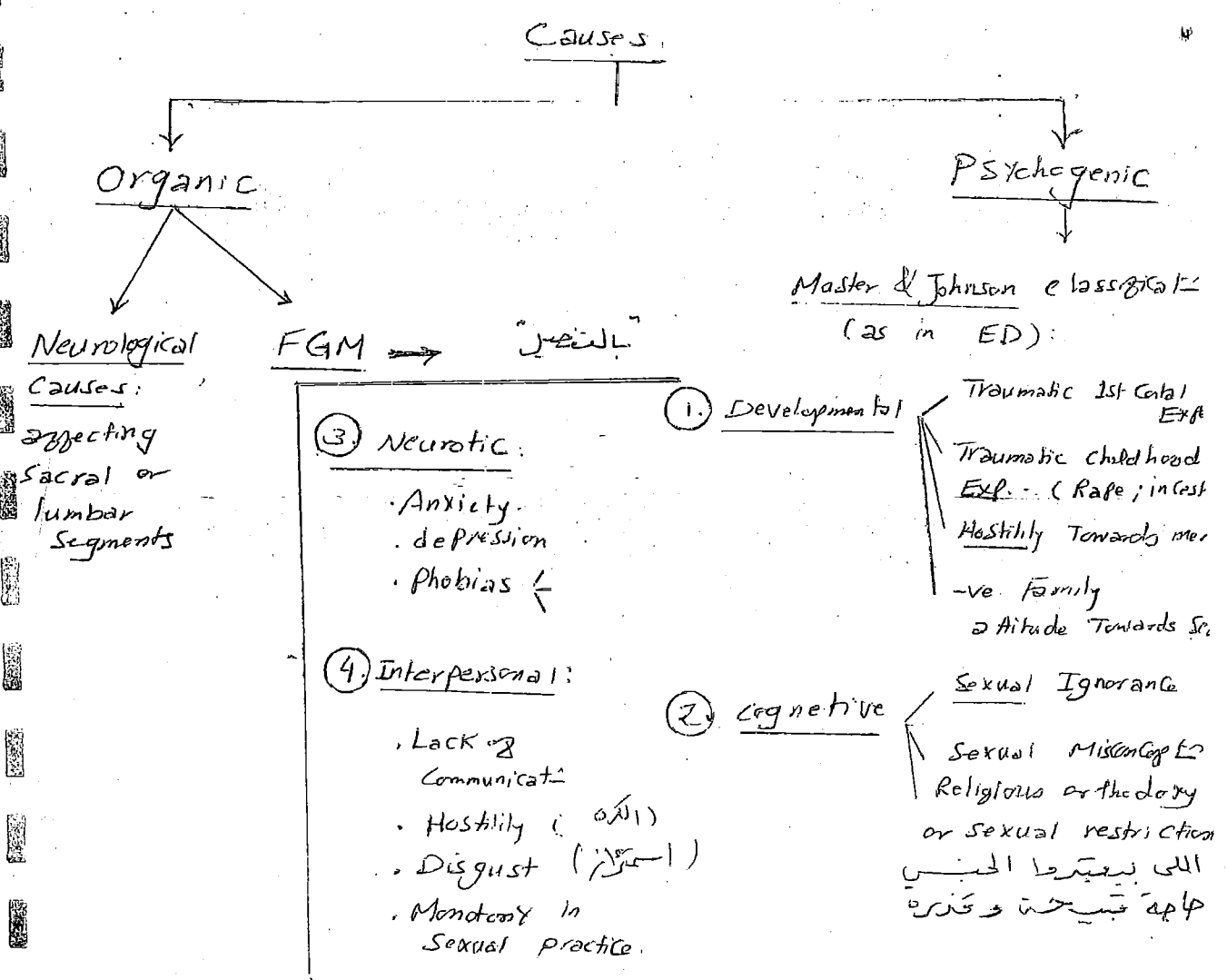
(Inhibited ♀ orgasm, Anorgasmia)

Inhib. to orgasm  
 Result from  
 NL excitation  
 Inadequate

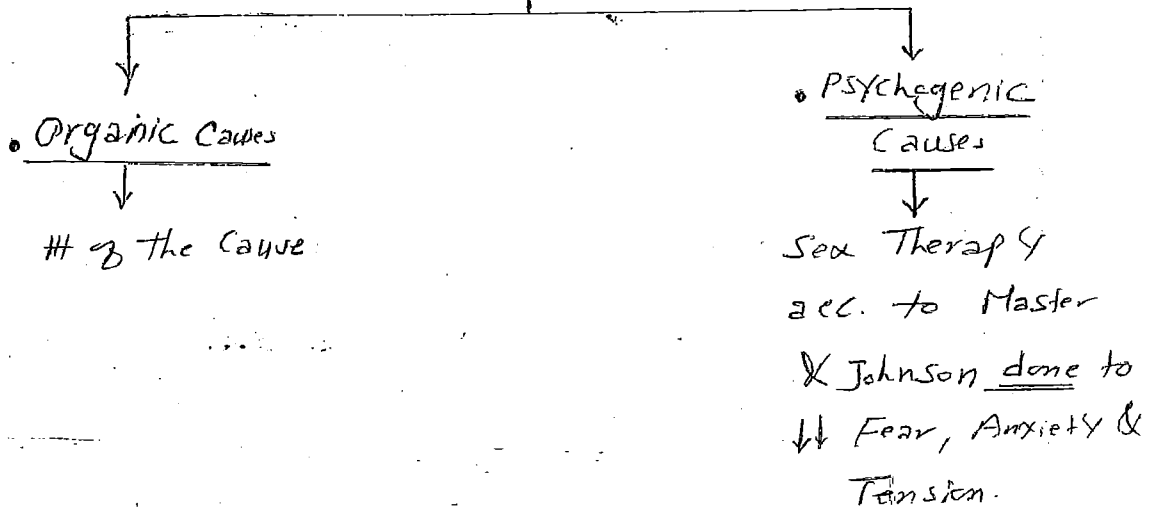
Def recurrent & persistent inhibition of orgasm following NL sexual excitation that is Adequate in focus, intensity & duration usually during coitus & masturbation

Types  
 1ry: ♀ never achieved orgasm before  
 2ry: ♀ had NL orgasm in the past; but now → NO  
 Selective: i Coitus not Masturbation

Complications → marked distress & Interpersonal difficulties



## Treatment of Dyspareunia



NB: Interaction Bet. ♂ & ♀ Sexual

Dysfunction:

[. PE  
. ED]

[. Vaginismus  
. Dyspareunia.]

Vaginismus

↓ Frustration

↓ Anxiety

ED & PE

↓ Tension & Frustration

Dyspareunia

→ Vaginismus (protective mechanism against pain)

Vaginismus

→ Dyspareunia (↓ difficult penetration)

# FGM = Female Genital Mutilation

"of anorgasmia"

Incid: Commonest Cause in Egypt & some African Countries

Types (Kiragu, 1995):

"Fold of skin that covers the clitoral gland"

Type I → prepuce (clitoral hood) is removed with part or all of clitoris.

Type II → Clitoris + labia minora are removed all parts or all

Type III → Clitoris + labia minora + labia Majora are removed all all cut & raw surfaces are sutured leaving only small hole for urination & menstruation

Type IV: more aggressive form

as vaginal scraping cutting & cauterization by corrosives.

## Historical & Religious Aspects:

موجودة قبل المسيحية والإسلام سنة ١٧٣٠ م (في أفريقيا)

١٩٤٠: وجدت في UK & USA لصداع

١٩٥٠: كان من قبل المسيحية والإسلام

في بلاد مختلفة (أفريقيا - آسيا - أمريكا)

١٩٧٢: منع وزارة الصحة من ممارستها إلا بطرق

Epilepsy  
Hysteria  
lesbianism

## Complications:

Dysp.  
Vaginismus  
Anorgasmia  
Spermat.  
Psych.

### Before Marriage

- Pain
- Bleeding
- Infection
- Keloid
- Psychological shock
- Urine retention
- Menstrual irregularities
- Retention cysts

### after marriage

- Vaginismus
- Dyspareunia
- Inhibited Excitation
- Inhibited orgasm
- False sense of (P)
- Infertility
- Psychological Troubles:
  - Depression
  - Anxiety
  - Anal sex
- Vesicovaginal Fistula
- Vaginal Prolapse
- Obstructed Labour

## Treatment of ♀ Anorgasmia

### Sex Therapy

- Aim:
  - ↓ Performance anxiety
  - ↓ Frustrations
  - Corrects & misconcepts

- ① Attention For Psychological Inhibition (♀ orgasm very

vulnerable to psychological inhibition)

- ② Masturbation program: educate her about her genitalia → Self stimulate when alone → Then in presence of Husband → Then (he) stimulate her genitalia → Then intercourse.

### Drug therapy (Under trials)

- Menopausal Atrophic Genitalia
  - Estrogens
  - Androgens
- oral
  - Viagra
  - phentolamine
- Sub-lingual
  - Apomorphine
  - Intravaginal PGE

## Female Mutilation

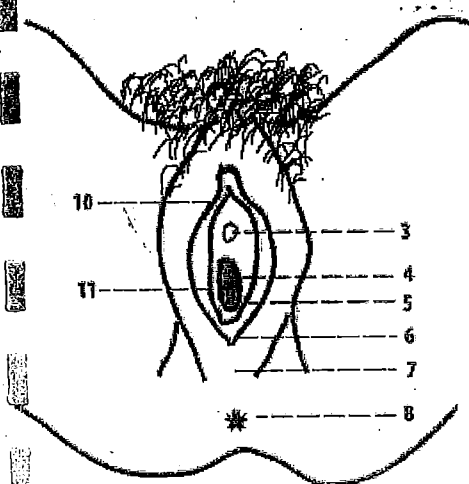


Figure 2. Type I Circumcision  
(removal of clitoris and/or clitoral hood)

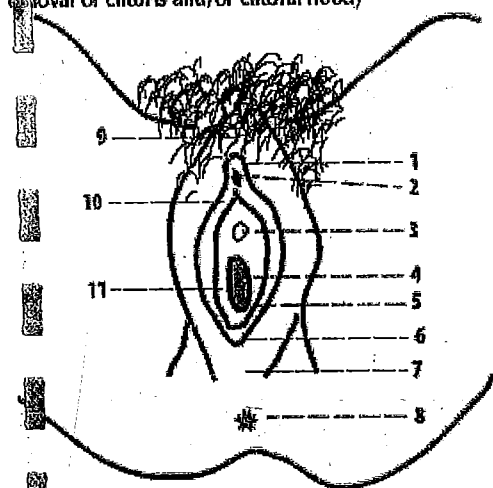


Figure 1. Unaltered Female Genitalia

1. Clitoral Hood (foreskin)
2. Clitoris
3. Urethra
4. Vaginal opening
5. Hymen
6. Bartholin's glands
7. Perineum
8. Anus
9. Mons veneris
10. Labia majora
11. Labia minora

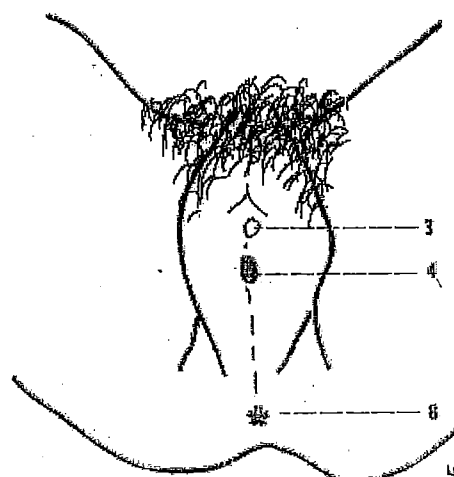


Figure 4. Type III Circumcision  
(removal of clitoris, labia minora and majora, and stitching vaginal opening)

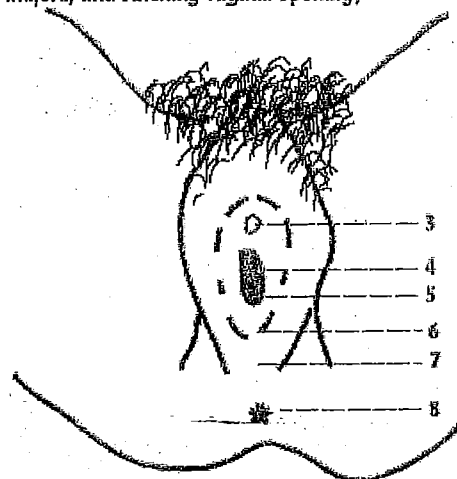
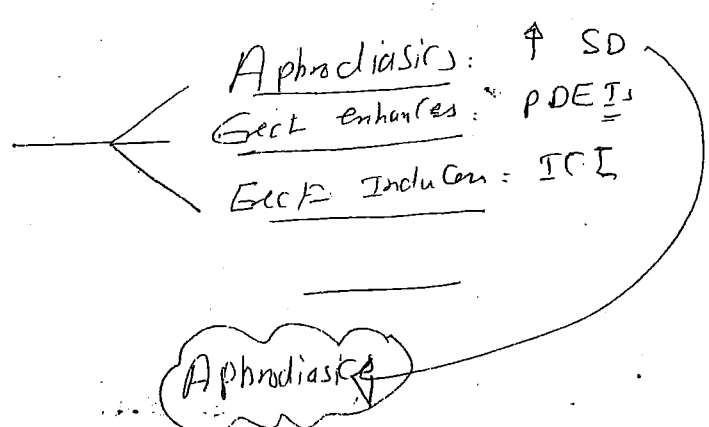


Figure 3. Type II Circumcision  
(removal of clitoris and labia minora and majora)



① Drugs

- Test.
- Yohimbin
- phenylethylamine (فندل),
- Anti parkinsonism drug.
- Melanotan
- others: Trazedone, Arginin, Agomorphine.

② Food

- See food
- Grapes.
- Fennel (فندل),
- Cardamom (اللبان)
- Cloves (القرفة)
- Saffron (الزعفران)
- Vanilla

③ Others

- pheromones = Scented
- Ginseng
- Spanish fly

1/86

## Test. Pain (Orchalgia)

Def- Orchidynia = Chr. Scrotal Pain Synd:

- Constant Test. Pain  $\geq 3$  mo. that  $\neq$   $\pm$  pt. life daily activity

A. Testicular Causes: Inf., Trauma, Tm, Varicocele,  
Torsion, Hydrocele, Spermatocele

B. Referred Pain: (d.t. common innervated)

- Ureter
- hip
- Vertebral disc prolapse
- entrapment Neuropathies of  
ilioinguinal or genitofemoral N.  
d.t. Hernia or following repair.

Inv acc. to  
et.  $\Rightarrow$  UL

HT (Causat)

1. Carbamazepine
2. Tegretol
3. TCA
4. Amitriptyline
5. Nerve Block;

pelvic plexus  
local AnestH + MPIA

6. Surgical  $\rightarrow$  spermatic  
cord or epid.  
degeneration

Diabetic Neuropathy

Hyperuricemia.  
Imipramine withdrawal.

Cystic scrotal lesions:

epid. cyst or spermatocele,  
vasal / epid. obst.  
postvasectomy synd.



## Chapter 20

### SEXUAL PERVERSIONS

#### 1. GENDER IDENTITY DISORDERS (TRANSSEXUALISM)

DIAGNOSTIC CRITERIA (according to *DSM-III, 1980*):

- A. Sense of discomfort about one's anatomic sex.
- B. Wish to be rid of one's genitals and to live as a member of the sex.
- C. The disturbance is continuous for at least 2 years not limited to periods of stress.
- D. Absence of genetic abnormality or intersex.
- E. Absence of mental disorder e.g. schizophrenia.

#### TYPES AND CLINICAL PRESENTATIONS:

There are male and female transsexuals. Both of them may be:

- 1. Primary starting first behaviour that can be distinguished as gender identity behaviour i.e. 2-4 years age (see Chapter 5).
- 2. Secondary: acquired later so they have variable periods of maleness before.

#### A. MALE TRANSSEXUALISM:

The male transsexual feels as if he is a girl although he does not deny his anatomical maleness.

So, he has a strong desire overriding all other wishes to become a female. This forces him to do sex change procedures such as:

- a. Oestrogen medication: creates breasts, and round contours.
- b. Electrolysis: for hairs of masculine distribution.
- c. Operations:
  - 1. Amputation of the penis.
  - 2. Castration of the testes.
  - 3. Creation of artificial vagina.

However, he has passed in the society and behaved as the opposite sex long period even before making the above procedures.

*N.B.: This condition should be completely distinguished from transvestism (cross-dressing) in which the person becomes sexually aroused by dressing as the opposite sex but he does not want to change his anatomical sex as in transsexualism.*

**Aetiology:**

Some studies showed occasional association with decreased testosterone levels, epilepsy, pituitary tumours or disturbed parents-child relationship (*Kolodny et al., 1979*) but there is no clear evidence till now about the aetiology (*Masters et al., 1992*)

**Treatment:**

1. **For the transsexual boys:** Although the cases are few, they are encouraging. The treatment depends on behaviour modification in the form of encouraging the pleasures of masculinity and discouraging femininity. Family treatment especially the mother is carried out also.
2. **For the adult transsexuals:**
  - a. So far, no treatment has been reported to make the adult transsexual masculine.
  - b. For those cases the doctor either will do nothing for them or will comply with their wishes for sex change.
  - c. However, in addition to the obvious religious and ethical obstacles against sex change, there are other factors that are against these procedures:
    - First: Some authors believe that doing such procedures is similar to treating delusions by giving the patient what he delusionally demands.
    - Second: Surgical transformation is permanent and there is no turning back if the psychological results are poor.
    - Third: Absence of good amount of short or long term follow up reports or controlled studies (*Wise, 1983*).

**B. FEMALE TRANSSEXUALISM:****Types and Clinical Presentations:**

- a. Like the male transsexuals they do not deny their anatomic sex but they have a strong desire to change their sex and live as males.
- b. Unlike the male transsexuals they have been masculine since early childhood and they have not had any episodes in their life in which they were feminine in most of the cases.
- c. When a child this girl refuses to be a girl, she gives herself a boy's name and dresses similar to boy's dressing and becomes interested in boy's activities. Usually she has some defect in her appearance and she is not so beautiful.
- d. This female, later on, finds a female partner with whom, she lives for a long time. This female partner is not homosexual but usually a heterosexual married female with children. She responds to the female transsexual as if she is a male with a penis.

**Aetiology:**

No obvious cause is present.

**Treatment:**

There is no available successful treatment till now and sex change operations more complicated by the fact that it is very difficult to create functioning testis and penis. Behaviour modification may help in some cases. The basic rule is that psychiatry could assist more than surgical mutilation (Williams, 1978).

In conclusion: The transsexual surgery (either male to female or female to male) is a cure for the disorder but it may be a measure to improve their psychological well-being although many studies showed no psychological improvement after operations and many centers stopped doing this operation (Masters et al., 1992).

## II. HOMOSEXUALITY

**TERMINOLOGY:**

Homosexuality means sexual attraction towards the persons of the same sex with or without physical contact. This is in contrast to heterosexuality that is the attraction to the opposite sex. The term bisexuality means the attraction and the physical contact to both the same and the opposite sex. Homosexuality in the males is termed sodomy after the name of the town *Sodom* that had been famous along history by this practice. Homosexuality in the females is termed as lesbianism or sapphism after the name of the island of *Lesbos* in which the homosexual poet *Sappho* lived (Gennaro et al., 1979).

**THEORIES OF AETIOLOGY:**

- A. According to the large extensive study of Bell et al. (1981) to study the possible causes of homosexuality the following can be concluded:
  - a. There is no evidence to support the theory of dominant mother and father as a cause of male homosexuality.
  - b. There is no evidence to support the theory of seduction of the homosexual by an older person as a cause of the condition.
  - c. Sexual preference is obtained mainly during the critical period of adolescence. It rarely changes after that period.
- B. According to Masters et al. (1992), there is no evidence of any genetic, neurological or hormonal causes of homosexuality and further studies are needed to understand this condition.

**PATTERNS OF HOMOSEXUAL PRACTICE:**

Those include kissing, petting, genital manipulation or anal intercourse. In cases of female homosexuals artificial penis may be used to simulate coitus.

**CLINICAL FEATURES OF HOMOSEXUALITY:**

According to sex, strength, ego-syntonicity, object choice and paraphilic complication.

1. Sex: There may be male homosexuality or female homosexuality lesbianism.
2. Strength: Obligate, preferred homosexuality, bisexuality, opportunistic homosexuality (*see Kinsey study*).
3. Ego-syntonicity:
  - A. Ego-syntonic: person is comfortable with his homosexual impulses.
  - B. Ego-dystonic: person is not comfortable with his homosexual impulses and feels guilty and anxiety sensations.
4. Object choice:
  - A. Stable relation with adult person.
  - B. Casual relations with adult persons.
  - C. Seductions of children and adolescents.
  - D. Pure focusing on penis or anus to the exclusion of the person.
5. Paraphilic complications:
  - A. Sadomasochism.
  - B. Pedophilia.
  - C. Cross dressing.

**KINSEY SCALING FOR HOMOSEXUAL BEHAVIOUR (1948):**

Kinsey and coworkers provided this rating scale for homo- and heterosexual orientation that was based on data from 5300 men and 5940 women. However, their samples were not randomly selected, nor represented a balanced cross-section of population. But they provided the most extensive available data.

Among their findings are that:

4% of males are exclusively homosexuals.

10% of males are predominantly homosexuals.

37% of males have at least one homosexual practice.

Exclusively female homosexuals are half of the males.

Scaling:

0 Exclusively heterosexual.

1 Predominantly heterosexual accidentally homosexual

2 Predominantly heterosexual more than accidental homosexual.

- 3 Equal hetero- and homosexual.
- 4 Predominant homosexual. More than accidental heterosexual.
- 5 Predominant homosexual accidental heterosexual.
- 6 Exclusive homosexual.

#### TREATMENT OF HOMOSEXUALITY (MORGAN AND MORGAN, 1989):

##### A. Good Prognostic Features:

- a. Age less than 35 years.
  - b. The presence of some heterosexual interest.
  - c. The presence of motive to change the homosexual behaviour (i.e. ego-dystotic type).
  - d. The absence of personality disorders.
- Up to 40% may benefit from the treatment.

##### B. Basic Principles of the Treatment:

- a. Reduction of heterosexual anxiety by gradual desensitization.
- b. Increasing heterosexual responsiveness with the aid of Masters and Johnson principles (see Chapter 8).
- c. Encouraging heterosexual behaviour on the social level, sexual level or even masturbatory activity during heterosexual imaging.
- d. Aversion techniques that depend on associating the homosexual fantasies or behaviour with harmful stimuli such as electric shock, or emetics to produce nausea and vomiting.

### III. PARAPHILIAS

#### INTRODUCTION

Paraphilias are sexual perversions or deviations characterized by the presence of specialized sexual fantasies or masturbatory practices. These fantasies include fixed unusual sexual material. The achievement of arousal and orgasm depends on mental elaboration or behavioural playing out of the fantasy.

##### A. COMMON FEATURES IN PARAPHILIAS

- a. There are persistent repetitive sexual fantasies of an unusual nature.
- b. Sexual arousal and orgasm are dependent in an obligate way on the fantasies.
- c. These fantasies are ego-syntonic although they may be considered as unusual.
- d. The common origin is conflict in the psychosexual development especially in the mother-child relationship, castration anxiety and/or separation anxiety (see before).

- e. The sex object may be unhuman and the sexual activity may be humiliating.

#### B. SPECIFIC PARAPHILIAS:

##### a. Fetishism:

1. Onset is usually after puberty and usually a male.
2. The sexual fantasies are objects such as shoes, gloves, or corsets that are intimately related to the human body and are relatively constant over time.
3. Sexual activity may be directed towards the fetish itself such as masturbation into an underwear or the fetish may be incorporated into sexual relation such as demand that high healed shoes are worn, during sexual activity, by the partner of the person.

##### b. Transvestism:

Transvestism is defined by DSM-III as recurrent and persistent cross-dressing by a heterosexual male in the absence of transsexualism.

This cross-dressing relieves anxiety or gender discomfort. If this cross-dressing led to sexual arousal and/or orgasm, the diagnosis of fetishism can be added.

Most transvestites are overtly heterosexual and marry. They have masculine professions, interests, and hobbies. This is an important point of differentiation between this group and the transsexuals.

The cause of transvestism, though not clear, may be due to dressing the boy in female clothes in infancy or childhood leading to threatening of his developing masculinity.

##### c. Zoophilia

In this perversion, animals, are preferentially incorporated into arousal fantasies and/or sexual activities including masturbation, coitus or oral-genital contact. It is also known as **bestiality**.

This perversion may occur in areas which prohibit sexual relations and the availability of many domestic animals with which a strong tender relations are made.

However, those circumstances cannot lead to zoophilia alone unless there is strong predilection for animal contact.

##### d. Pedophilia:

In this perversion, children, are preferentially incorporated into arousal fantasies and/or sexual activities including either heterosexual or homosexual contact exclusively (*see Child Abuse*).

Pedophilia may be associated with aggression, sadism and feeling of dominance and control over the child. This feeling is exciting and compensates for the fear of similar condition that may occurs to the pedophilia in adult sexual relations.

**e. Exhibitionism:**

In this perversion, genital exposure to a stranger as an unsuspecting female, is the central arousal fantasy. The condition affects only the males. In this condition, the presence and the power of the penis is reasserted by watching the woman's reaction **fright, surprise or disgust**. Thus he feels superior to her by observing her reaction and may continue the fantasy to masturbation.

**f. Voyeurism:**

In this perversion, the opposite to exhibitionism occurs i.e. the male gets his main fantasy by observing an unsuspecting woman while she is removing her clothes or during any sexual activities as masturbation or coitus. He feels superior to her while observing the nature of her genitals and he gets orgasm by masturbation to be reassured by his intact penis.

**g. Nymphomania:**

The nymphomaniac female is a compulsively promiscuous female who engages in many sexual contacts with many partners without love or satisfaction. They have personality problems rather than sexual gratification. Most of them are anorgasmic. They are completely different from the normal orgasmic wife who may need to increase the frequency of their marital relations. The male counterpart of this paraphilia is *satyriasis* (Auerback, 1975).

**h. Sexual Sadism and Masochism:**

In these 2 perversions, the essential sexual fantasy and/or sexual activity during coitus or masturbation is represented by active or passive experience of physical or emotional humiliation, danger, abuse or discomfort. In sadism the active role is carried while in masochism the passive role is carried. They represent 2 opposite unintegrated aspects of the self with poorly uncompensated fear of injury.

These 2 perversions can occur:

1. In males or females.
2. With the sadist can acquire the masochist role and vice-versa.
3. In pure form they are the only sexual activity or in the preferential form.

**I. Atypical Paraphilias:**

This group includes those paraphilias in which the essential feature of fantasy is excretory functions as defecation or urination on or around the sexual partner or the excreta itself as stools **coprophilia** or urine **urolophilia**. They are the excretory paraphilias.

**C. THEORIES OF AETIOLOGY AND TREATMENT:**

There may be some genetic, hormonal or neurological factors involved in this condition, but there is still no support for these theories. The **treatment principles** are similar to those of homosexuality and include (1) **desensitization** to decrease anxiety related to normal sexual behaviour; (2) **orgasm reconditioning** towards normal sexual behaviour (*Schwartz and Masters, 1983*); (3) **social reconditioning** to perform normal interpersonal relations (*Zilbergeld and Ellison, 1979*); (4) **aversion techniques** that associate the paraphiliac behaviour with electric shock; (5) **anti-androgen therapy** in the males may reduce the paraphiliac desires (*Berlin and Meinecke, 1981*).

**IV. CHILD ABUSE**

Children may be exposed to sexual abuse in many ways. This is more common when the parents neglect their children as leaving them alone or with older servants or in public. Child sexual assaults may be actual, imaginary or in the form of seduction as follows:

- A. Actual Assault:** The assailant is usually an adult or a senile male. He is usually impotent and has many failures in adult sexual relations. The victim is usually a female child that may be a member in the family of the assailant, thus making the crime of child abuse complicated by incest. The child may react in different ways as she or he may be shocked, may be frightened up to crying and screaming or may show indifference and apathy.
- B. Imaginary assault:** Some children may fabricate or imagine an assault. This may occur in children who are intensely preoccupied with guilt from accidental observation of their parents during their sexual relations.
- C. Seduction:** There is no forcible sexual abuse and the assailant is usually familiar to the child, thus he takes the chance to do sexual contact with the child.
- D. Molestation:** This is an incomplete form of genital contact as the molester may kiss, hug, fondle or uncover the buttocks of the child.



- E. Enemas: Repeated enemas for children may lead to future psychic disturbances if used many times and in a rough manner. Later on, they may lead to vaginismus in females or homosexuality in males.

*N.B.: Another form of child abuse that is still practiced in Egypt is the female genital mutilation. This procedure may be considered as child abuse due to its drastic psychic and physical complications (see the subject of Female Anorgasmia).*

#### COMPLICATIONS OF CHILD SEXUAL ABUSE:

##### A. Physical Complications:

1. Head injuries and fractures.
2. Genital lacerations and hymenal tears.
3. Catching sexually transmitted diseases.
4. Illegal pregnancy in older age group.
5. Death.

##### B. Psychological Complications:

1. Nightmares and night terrors.
2. Nocturnal enuresis.
3. Phobias of darkness, loneliness and school.
4. Personality disorders.
5. Sexual disorders in the adult life.
  - Impotence.
  - Homosexuality.
  - Paraphilias.
  - Vaginismus.
  - Prostitution.
  - Anorgasmia.

#### TREATMENT:

Prevention is better than cure. The parents must observe their children carefully and must not leave them alone with strangers for long periods. Also, they should observe any change in the behaviour or the personality of them to discover any underlying sexual abuse.

#### V. RAPE

##### DEFINITION:

Rape is defined legally as forcible sexual assault with penile penetration of the vagina against the female will or consent.

**THE ACT OF RAPE:**

In contrast to the common belief, rape is not a truly sexual act but it is an act of violence, anger and humiliation expressed in a sexual manner.

**THE RAPIST:**

The rapist may be one of the following:

1. Mentally retarded or a psychotic man.
2. He may have a personality disorder.
3. He may have sadistic feelings.
4. He may be an addict especially alcoholic.

In all conditions he always implies that the female victim behaved in such a way as to invite and encourage him. Actually, most of the rapists make this crime to practice and feel power, virility and dominance over the female or as a mode of revenge and sadism when he threatens her with a knife, injures her body or even urinates on her.

**THE VICTIM:**

She tends to be passive as she feels that resistance may threaten her life. At first her main concern is to save her life, then severe shock may occur.

She is usually a friend, a lover or a neighbour to the rapist. Ages from 5 years up to 90 years have been reported. 43% of rapes are committed by more than one assailant.

There is always under reporting of this crime as the victim may be afraid of further shame, humiliation, family troubles or revenge from the rapist if he was not punished.

The rape trauma syndrome has 2 phases:

1. **Acute phase:** There is a psychological reaction with feeling of humiliation, self blame, desire for revenge and death and a somatic reaction in the form of altered sleep and food habits, and multiple body aches.
2. **Long term phase:** There may be phobias, anxiety or depression. Sexual effects include inhibited desire anorgasmia or vaginismus (*see before*).

**N.B.: Effects of Some Mental Illnesses on Masturbation and Sexuality:****A. Neurotic Disorders:****a. Anxiety:**

1. *Masturbation: increases in frequency as a measure to decrease the inner tension.*
2. *ED is common to occur in males with severe anxiety. A similar condition of the female is lack of lubrication swelling response.*
3. *Premature ejaculation: is common due to high sympathetic tone.*

b. *Depression:*

1. *Masturbation:* increases in frequency due to guilty feelings resulting from it as a form of self punishment.
2. *Desire and arousal:* are inhibited. However the patient may function well and the incidence of impotence is not high about 23%.

c. *Obsessive compulsive neurosis:*

1. *Masturbation:* rarely practiced due to their rigid trait, strong conscious and control over themselves.
2. *Failure* in attaining a high level of sexual arousal that may lead to impotence.

d. *Hysteria:*

1. *Masturbation:* rare, due to their sexual frigidity.
2. *Failure:* of both excitement and orgasmic response.
3. A characteristic conflict between their inner sexual frigidity and the overt sexuality and seductive attitude.

B. *Psychotic Disorders:*

a. *Mania*

1. *Masturbation:* increases as a part of overactivity and high sex drive. It is not associated with guilt.
2. *Excessive sexual relations* and frequent promiscuity.

b. *Schizophrenia:*

1. *Masturbation:* aimless act due to disturbed thinking or due to response to hallucinations.
2. *Absolute loss* of all components of sexual intercourse in response to delusional beliefs or hallucinations.

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## Chapter 39

## ANDROLOGIC CLINICS

I. ANDROLOGICAL EMERGENCIES: *X.P.C.*

## Simplification Points

- A. Congenital conditions: Ambiguous genitalia.
- B. Traumatic conditions: (a) Testicular torsion. (b) Priapism. (c) Operative trauma. (*Fracture*)
- C. Infective conditions: Fournier's gangrene. (*Scrotum*)
- D. Neoplastic conditions: Testicular tumours.

## A. Congenital Conditions:

The most important is the infant presenting by intersex associated with ambiguous genitalia (either virilized female genitalia or feminized male genitalia). The different conditions of ambiguous genitalia and the details of their diagnosis and treatment are in (Chapter 6). There are 3 important aspects concerning the ambiguous genitalia that should be stressed upon as follows:

- a. The diagnosis of ambiguous genitalia is a social and medical emergency that needs immediate and thorough intervention by a team of the pediatrician, andrologist, gynecologist and psychiatrist. The parents should be told that the sex assignment of the infant will need some time to be done in order to be correct and avoid psychological and social trauma (Bailey, 1997).
- b. All these infants should be considered to have congenital adrenal hyperplasia (CAH) till proved otherwise because (CAH) is a life-threatening condition. Failure of its early management may endanger the infant's life (Bailey, 1997).
- c. The risk of malignancy associated with gonadal dysgenesis should be assessed both early and later during subsequent development (Mandell, 1998).

## B. Traumatic Conditions:

- a. Testicular torsion: This is discussed in details in (Chapter 28). It needs immediate diagnosis and treatment within (2-4 hours) to avoid irreversible testicular damage (Holstein et al., 1994).
- b. Prolonged erection and priapism: Those conditions are increasing in incidence due to the widespread use of (ICI) for the diagnosis and treatment of ED. The management should be within 4-6 hours and is discussed in details in (Chapter 13). What should be stressed upon is that (ICI) should not be used except by the

qualified and trained andrologist who is experienced in the medical and surgical treatment of priapism. Otherwise a significant number of the patients may lose their erectile function.

- c. **Operative trauma:** Operative complications during andrological surgery may be related to the delicate nature of the male genital system or from the lack of experience in this specialized type of surgery. The possible complications and their management are discussed in details in (Chapters 12, 13, 16, 28, 29, 31, 37, 38). When andrological surgery is performed, there may not be a great danger for the patient's life. However, what is actually in danger is the "new life" with the potential for altering not only the quality of the couple's life but the future of our species. Many of these operations are among the most technically demanding operations which deserves proper training and microsurgical practice. Attempting such surgery only occasionally and without proper training carries terrible dangers to the patient, the couple and the future humanity (Goldstein, 1998).

#### C. Infective Conditions (Fournier's Gangrene):

This is discussed in details in the *other volume on Sexually Transmitted Diseases* (Chapter 20). Early aggressive treatment is essential due to its high mortality rate that may reach up to 45% of the patients (Patty and Smith, 1992).

#### D. Neoplastic Conditions (Testicular Tumours):

Although the common presentation of these tumours is chronic testicular swelling, there are 2 conditions of testicular tumours that may present in the acute form as follows:

1. **Acute orchitis-like picture testicular tumours:** Some testicular tumours may present by an acute and painful scrotal swelling that may be managed wrongly as orchitis (Rains and Mann, 1988).
2. **Acute hemorrhage into testicular tumour:** Some testicular tumours in children may present in an acute form due to sudden necrosis and hemorrhage into the tumour (Ross, 1999).

## II. SCROTAL SWELLINGS:

## Simplification Points

## A. Acute scrotal swellings:

- |                    |                      |                |
|--------------------|----------------------|----------------|
| a. Testis.         | b. Tunica vaginalis. | c. Epididymis. |
| d. Spermatic cord. | e. Scrotal skin.     |                |

## B. Chronic scrotal swellings:

## a. Cystic swellings:

- |                    |                      |                |
|--------------------|----------------------|----------------|
| 1. Testis.         | 2. Tunica vaginalis. | 3. Epididymis. |
| 4. Spermatic cord. | 5. Scrotal skin.     |                |

## b. Solid swellings:

- |                    |                      |                |
|--------------------|----------------------|----------------|
| 1. Testis.         | 2. Tunica vaginalis. | 3. Epididymis. |
| 4. Spermatic cord. | 5. Scrotal skin.     |                |

## A. Acute Scrotal Swellings:

سوال ٥

## a. From the testis:

1. Testicular torsion (Chapter 28).
2. Orchitis: Inflammation of the testis (Chapter 27).

## b. From the tunica vaginalis:

1. Hematocele: This is accumulation of blood inside the tunica vaginalis that may occur after trauma to the scrotum. On transillumination test, it is not translucent which differentiates it from hydrocele that is translucent (light passes through it as a transparent swelling around the testis).
2. Pyocele: This is accumulation of pus inside the tunica vaginalis and may occur secondary to epididymo-orchitis.

N.B.: Both haematocoele and pyocoele should be surgically evacuated to avoid their organisation and fibrosis that may lead to testicular atrophy.

## c. From the epididymis:

1. Epididymitis: This is an inflammation of the epididymis (see this volume in Chapter 31 and see the other volume on Sexually Transmitted Diseases-Chapter 23).
2. Epididymal congestion: This is common among the young unmarried men. It is related only to congestion and not to any organisms. It needs reassurance and regulation of sexual life.

## d. From the spermatic cord:

1. Acute thrombosis in varicocele: The patient has long standing varicocele that suddenly becomes swollen, painful and tender.

2. Complicated hernia: Painful, tender, irreducible.
3. Acute endemic (*filarial*) funiculitis: Funiculitis is inflammation of the spermatic cord. Filariasis is endemic in some rural areas in Egypt in Guiza and Sharkia (see Chapter 31).
- e. From scrotal skin:
  1. Infected sebaceous cysts: Those are common in the scrotal skin.
  2. Fournier's gangrene (see the other volume on Sexually Transmitted Diseases Chapter 20).

## B. Chronic Scrotal Swellings:

### a. Chronic Cystic Swellings:

1. From the testis:
  - Some testicular tumours may have cystic areas and are of heterogenous consistency.
2. From the epididymis:
  - Spermatocele (Chapter 38).
  - Bilateral epididymal cysts may occur in Von-Hippel-Lindau syndrome (Chapter 31).
3. From the spermatic cord:
  - Varicocele is the most common swelling (Chapter 29).
  - Hydrocele of the spermatic cord.
  - Hernia: Reducible inguinoscrotal swelling with impulse on cough.
4. From the scrotal skin:
  - Sebaceous cysts.

### b. Chronic Solid Swellings:

1. From the testis:
  - Testicular tumours (see Chapter 34).
  - Testicular gumma (see the other volume on Sexually Transmitted Diseases, Chapter 9).
2. From the tunica vaginalis:
  - Hydrocele (Chapter 37).
  - Haematocele and pyocele in chronic long standing cases.
3. From the epididymis:
  - Chronic epididymitis (Chapter 31).
  - Tumours of the epididymis (Chapter 31).

## 4. From the spermatic cord:

- Chronic infections such as bilharziasis, filariasis and TB of the cord with the characteristic *beaded vas deferens* in cases of TB (*Chapter 31*).
- Lipoma of the cord: Diffuse solid cord thickening with *no reduction in size on lying down*.

## 5. From the scrotal skin:

- Filarial elephantiasis of scrotum (*Chapter 31*).

## II. GYNECOMASTIA:

## A. Definition:

It is an increase in the size of the glandular tissue of the male breast felt as a firm mass inside the soft breast tissue.

## B. Differential Diagnosis:

## a. Two conditions to be differentiated from gynecomastia:

1. Lipomastia: Increase in the fat content of the breast in obese males.
2. Breast cancer: The condition is usually unilateral and hard. Mammography is indicated.

## b. Two conditions to be excluded in gynecomastia:

1. Prolactin secreting adenoma of the pituitary gland.
2. Oestrogen secreting tumours of the adrenal medulla or of the testis (*Braunstein, 1993*).

Abdominal and scrotal sonography are indicated.

## C. Aetiology:

Gynecomastia results from any condition in which there is oestrogen/androgen imbalance. This may occur either due to increased oestrogen or due to decreased androgen synthesis or actions. Also, hyperprolactinemia may impair androgen actions. The sources of oestrogen in the male include **direct secretion** by Leydig cells (15%) and **peripheral conversion** from androgens in the liver and adipose tissue (85%). Accordingly, gynecomastia may be found in the following conditions:

a. Physiological Gynecomastia (*Bell, 1998*):

1. Neonatal gynecomastia: It is due to placental transfer of oestrogens.
2. Pubertal gynecomastia: During early puberty, the production of oestrogen rises before the production of androgen leading to imbalance of their ratio, then the condition resolves also spontaneously.



3. **Advanced age (senescent) gynecomastia:** It occurs due to decrease in androgen production and increase in its peripheral conversion to oestrogen due to increased adipose tissue.

**b. Pathological Gynecomastia (Meschede et al., 1997):**

1. **Primary and secondary testicular disorders:** Androgen deficiency in these conditions or the associated hyperprolactinemia may lead to gynecomastia (Chapters 26, 27).
2. **Drugs and systemic disorders:** The same mechanisms of gynecomastia such as low androgen or high prolactin (Chapters 10, 35).
3. **Neoplastic disorders:** Those include endocrine active tumours that include:
  - Testicular tumours secreting oestrogen or (HCG) hormone.
  - Adrenal cortex tumours.
  - Ectopic (HCG) secretion by tumours of the lung, liver and kidney.

**D. Management:**

- a. **Diagnosis:** This aims at confirmation of the diagnosis in addition to the investigation of the possible causes such as systemic diseases and drugs. The examination is done for signs of endocrinal disorders (Chapter 24). Laboratory estimation of FSH, LH, prolactin, testosterone, oestrogen is done in addition to liver and kidney functions. Exclusion of the tumours by ultrasonography and CT scanning is essential.
- b. **Treatment:** Plastic surgery is indicated for persistent cases with size over 3 cm. Drugs can be used and include tamoxifen, clomiphene, danazole and testolactone (Bell, 1998).

**IV. GERIATRIC ANDROLOGICAL PROBLEMS:**

Old males are prone to some physiological and pathological changes as regards their reproductive life. In contrast to the menopause in the females that has been extensively evaluated, the andropause (male climacteric) is still in need for further studies (Dunsmuir, 1998). Some important examples of geriatric andrology problems include the following:

**A. Sexuality in Old Age:**

There is decline in the sexual activity in old age (see the details in Chapter 3). This may be aggravated by associated conditions such as cardiovascular diseases, hepatic and renal dysfunctions and drugs (Chapters 10, 35). In addition widower syndrome is common in old age (Chapter 8).

**B. Fertility in Old Age:**

There is decline in the testicular functions in old age (see the details in Chapter 21). This may be aggravated by some associated diseases or drugs (*Chapter 35*).

**C. Prostatic Hyperplasia:** *"BPH = prostatism"*

- a. **Incidence:** Benign prostatic hyperplasia that affects mainly the *transitional zone* of the prostate (*see the other volume on STDs Chapter 3*) increases with advancement in age. It may affect up to 17% of men over 50 years, 27% of men over 60 years and 35% of men over 70% (*Jacobsen et al., 1995*).
- b. **Symptoms and complications:** It may be asymptomatic or give rise to 3 groups of symptoms as follows (*Resnick, 1999*):
  1. **Obstructive symptoms:** Weak stream, terminal dribbling, incomplete emptying, straining and intermittency.
  2. **Irritative symptoms:** Urgency, frequency, nocturia and incontinence.
  3. **Other symptoms (complications):** Hematuria, infection, stones, retention and renal failure.
- c. **Treatment:** Mild cases need observation. Moderate cases may be improved by finasteride that is *5 $\alpha$ -reductase blocker* that prevents formation of dihydrotestosterone leading to shrinkage of the gland size and by  $\alpha$ -blockers that *relax the fibromuscular stroma of the prostate and bladder neck*. Severe cases need surgery (*Resnick, 1999*).

**D. Prostatic Cancer:**

- a. **Incidence:** This affects mainly the *peripheral zone* of the prostate (*see the other volume on STDs Chapter 3*). It is the most common cancer in men and the *peak incidence* is in the late 60s and early 70s. It is discovered at *postmortem* in about 30% of men over 50 years (*Roberts, 1995*).
- b. **Symptoms:** Early symptoms may be similar to those of benign prostatic hyperplasia or there may be late symptoms of metastases as hemoptysis and bone pains.
- c. **Screening:** Early detection of prostate cancer depends upon digital rectal palpation (DRP), (*see the other volume on STDs Chapter 2*) and presence of high levels of prostate specific antigen (PSA) (*less than 4 ng/ml is normal, 4-20 suspicious of cancer and above 50 diagnoses metastases*) (*Robert, 1995*).  
Further screening includes transrectal ultrasound (TRUS) and prostatic biopsy. The most important point is that androgen therapy should not be administered except after exclusion of prostate cancer by one or more of the above measures in order to avoid flaring of occult prostate cancer.

**V. INDICATIONS FOR GENETIC EVALUATION IN MALE INFERTILITY (Kim and Lipshultz, 1999):**

In the present era of (ICSI) these investigations have become important to prevent transmission of abnormal genes to the offspring. They include the following conditions:

Conditions indicated for testing	Genes studies
1. Congenital absence of vas deferens	Cystic fibrosis gene (chapter 31)
2. Azoospermia, or severe oligozoospermia	Y-chromosome deletions (AZF, DAZ) (chapter 27)
3. Azoospermia, or severe oligozoospermia	Karyotyping for Barr body (Chapter 27)

**VI. HEMOSPERMIA:****A. Definition:**

It is the presence of blood in semen.

**B. Causes (Papp et al., 1994):**

- Infection (30%).
- Prostatic calculi (20%).
- Malignancy (15%).
- No apparent cause.

**C. Management:****a. Diagnosis:**

- History:** Special attention is given to drug intake, hypertension, long period of sexual abstinence or any systemic disease.
- Examination:** The general and local examination are done to exclude prostatitis, urethritis or prostatic mass (see the other volume on STDs Chapter 2 in addition to Chapter 24 in this volume).
- Investigations (Hendry, 1998):**
  - Urine and prostatic smear culture in order to diagnose cases with prostatitis (see the other volume on STDs in Chapter 22).
  - Urine cytology and serum (PSA) to exclude bladder or prostate cancer.
  - Transrectal ultrasonography (TRUS) to exclude prostatic calculi, cancer, and abnormalities of seminal vesicles and ejaculatory ducts.

**b. Treatment:**

It is directed to the cause if it is found.



## B Cervical Mucus Method:

عند الإباضة (Cervical Mucus) يزداد

at ovulation it: ↑ in quantity, ↑ in Elasticity (Estrogen effect);  
then → ↓↓ (Progesterone effect)  
intercourse is allowed 4 ds after the maximal characteristics  
of Cervical Mucus.

## C Basal body temp:

يحدث ارتفاع في درجة الحرارة (0.2 - 0.5 °C) بعد الإباضة

التي تسمى (d.t. Progesterone) ← بعد الإباضة في ارتفاع في درجة الحرارة

- Adv:**
1. Cost & device free
  2. Immediate return of fertility after cessat.
  3. Suitable for couples with cultural & religious reasons
- Disadv:**
1. High failure rate (25%)
  2. Low flexibility, & interferes with spontaneity of love-making

## 2. Coitus Interruptus: (Extravaginal Ejaculation):

Penile withdrawal from vagina before ejaculation.

**Adv:** as the safe period. Free cost

**Disadv:** (i) High failure rate (20%) [Presemen may → Conceptus??]

(ii) Anxiety of ♂ ± → ED, PE, Anorgasmia & Vaginismus

## 3. Condom (French letter):

thin sheath placed over Glans & Shaft before vaginal

penetrat.

**Adv:** (i) cheap & return of fertility after cessat.  
(ii) prevent STDs.

**Disadv:** (i) High failure rate (14%) / year.

(ii) Interferes with Sexuality (↓ Sensat. of pleasure & disturb ejaculat.).

# ④ Vas Related Contraceptives :

## Ⓐ Surgical (Vasectomy)

## Ⓑ Non Surgical (Vasal occlusion)

### Conventional Method

### No-Scalpel Method

## A. Vasectomy

### Advantage:

- Effective
- safe
- simple

1. the most effective Contraceptive. (Failure rate 0-2%)
2. Simple, one step procedure; (done as out patient)
3. Minimal Morbidity with no Mortality.

BY  
Local  
Anesthesia

این روش به این غیر قابل برگشت است و باید به بیمار توضیح داد.  
کثیراً در USA، مصر، عربستان، هند و پاکستان  
(used by > 10% of USA / Couples).

### procedure: 2 Methods of Bilat. Vasectomy:

#### Conventional

(Scalpel, Incisional)

#### No-Scalpel

(Puncture, ~~per~~ hole, ~~in~~ section)

The 2 methods differs only on  
exposure & delivery of Vas.

قلم برقی  
تفت جراحی  
↓  
سنگر هائیج  
پایه

1. Conventional : 0.5 - 1 cm Scrotal Incision is done by scal
2. No-Scalpel : Vas fixing forceps is used to encircle & firmly fix the Vas & cut skin penetrates then curved, sharp pointed Hemostat is used to Puncture the skin & Vasal sheath → Vasal exposure.

Then

P. 90

- The vas is separated from the sheath and divided over two mosquito clamps.
- The vas is crushed by 2 kochers and cut in-between. The 2 ends are ligated by chromic catgut followed by closure.

Then in Conventional Method: skin is sutured  
No-Scalpel Method: Just dressing

also Vas +  
 . ligated (sutured)  
 . Cauterized  
 . Clamped.

Complications: (rare)

1. Infection, Bleeding & Hematoma
2. Failure (0-2%) ± dt: Inadequate closure of Vas  
 recanalization  
 double vas
3. Immunological infertility  
 (antibodies detected in 50-70%)

- Inf.
- Bleeding
- Hematoma
- Failure
- Imm. Inf.
- post Vasect. Synd
- psycho-sexual

4. Post Vasectomy Synd:

Pain: testicular, Epididymal w ± constant or ass. w intercourse, Erection & Ejaculation  
 Chr. & sometimes debilitating  
 onset: Immediately or several yrs after operat

5. Psychosexual disturbance

(الاضطراب الجنسي)  
 (الاضطراب الجنسي)  
 (الاضطراب الجنسي)

NB: No-Scalpel Method is better & widely Accepted dt:

- Faster procedure &
- Faster recovery
- No incision → No stitches
- less incid. of Bleeding & Hematoma.

Contraindications of Vasectomy:

- Bleeding disorders.
- Scrotal pathology (active groin inf., scarring)

(5)

بمبقي مشكلتين او حاجتين بعد العملية  
تبقى بالناس منها

Semen analysis after  
Vasectomy ✓

Spermatozoa still appears  
in ejaculate from ms - 1 y.  
usually become motile & fertile  
✓

Not Considered  
Failure

Use other  
Contraceptive  
during this  
period.

Fertility Preservation  
& Restoration:

بسبب انه ممكن يترك  
لانه انه طاهر وبيتر  
طهرانه لان كل واحد  
انطية اربعة ايام  
??

So fertility restoration  
can be Achieved By:

1. Cryopreservation  
before Vasectomy

2. Vasectomy reversal  
(Vasovasostomy or  
Epididymovasostomy)

تعمل بكذا قطعة و  
تصل بين طرفين  
التي كانت  
مفصولة

↓ Count, motility &  
Compared to  
prevasectomy  
• Antisperm Abn  
reconstruct ± occur

3. TESE & MESA:

For ICSI.

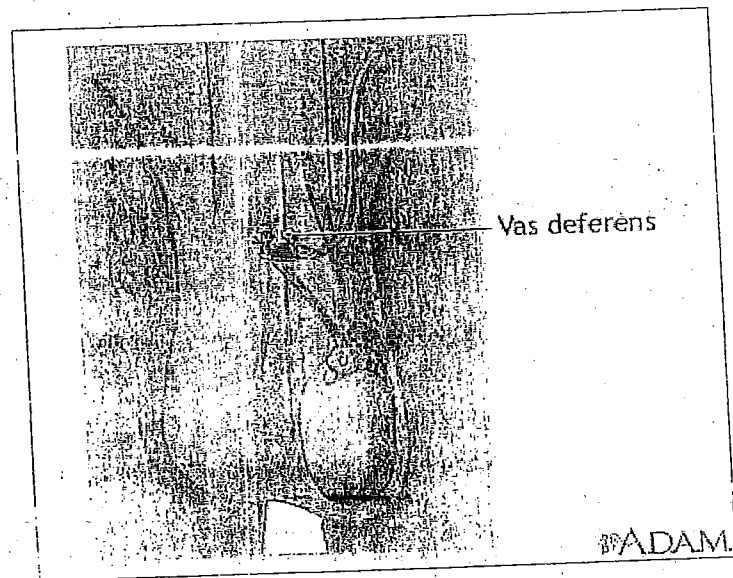
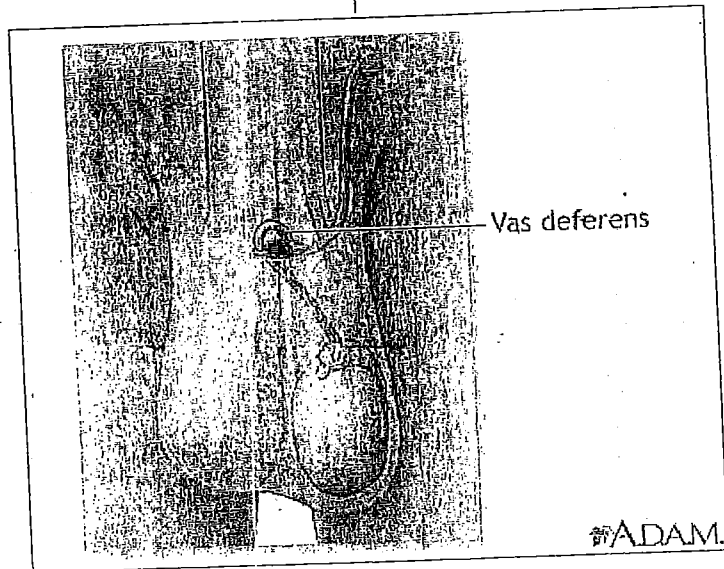
(دوره ابيض من ال Vasovasostomy)

Cryo ← كرايو  
TESE ← تيسه  
MESA ← ميسا



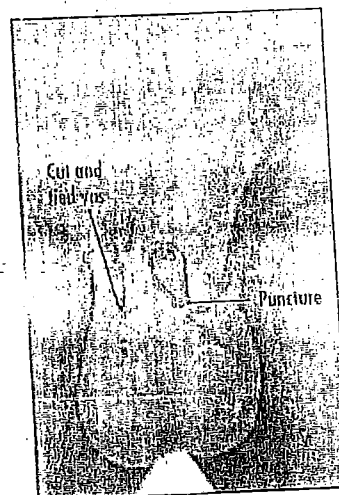
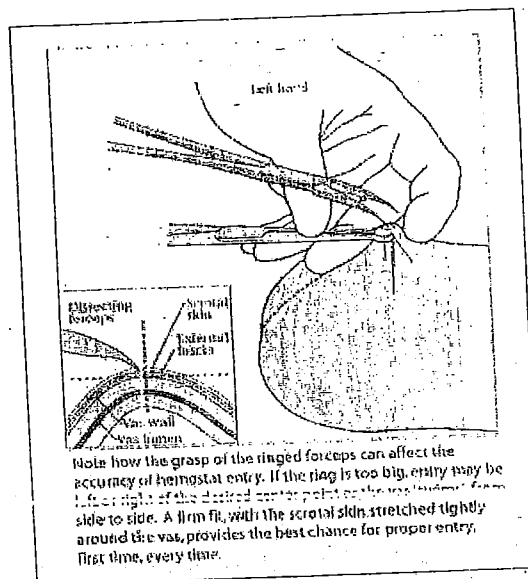
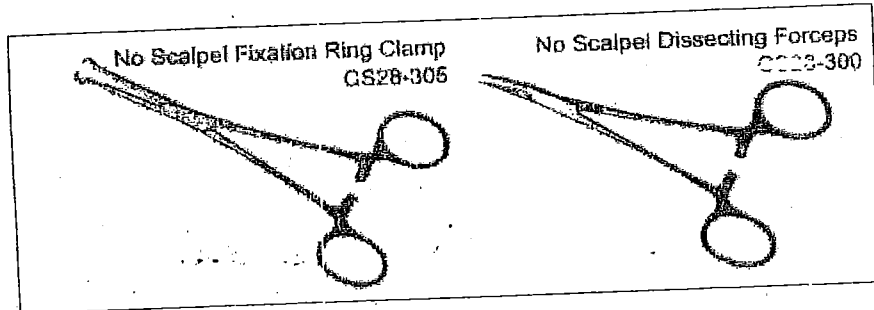
(6)

1- Conventional (scalpel) vasectomy



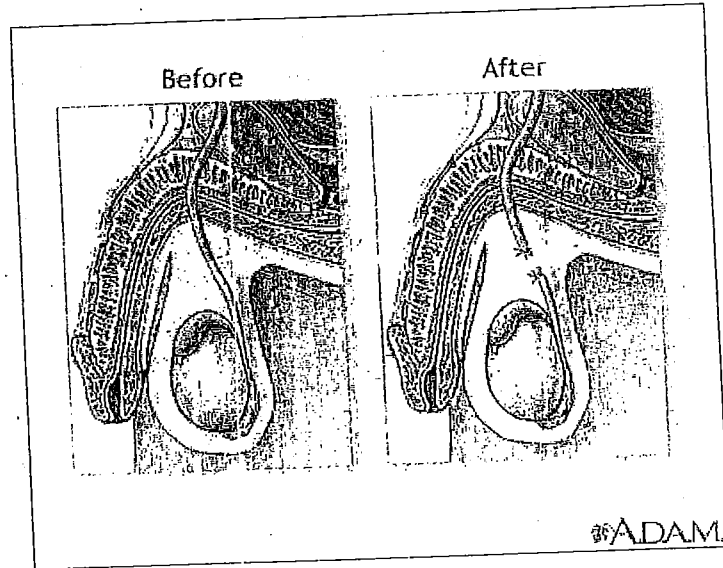
7

## 2- No Scalpel Vasectomy

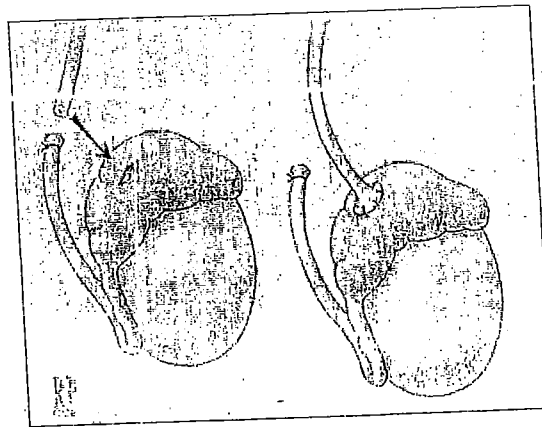


8

Final result of both procedures

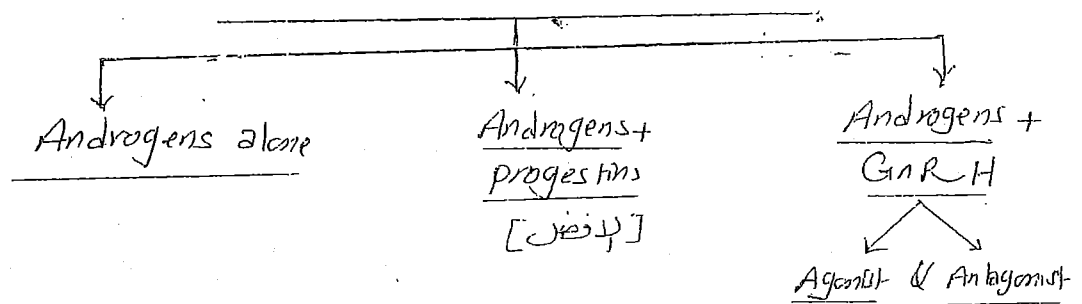


Vasectomy Reversal (epididymovasostomy)





## II. Male Hormonal Contraception



### Mechanism of Each Type:

A. Androgens Alone: → its mechanism is:

- (i) Mechanism
- (ii) Dose
- (iii) disadv.

production of supra physiological level of T. → -- GnRH, LH & FSH → -- of spermatogenesis → AZOOSPERMIA (or) severe oligo → Infertility

Maintenance of peripheral T. at levels high enough to preserve libido & potency

#### Dose.

T. Enanthate 200mg  
IM 1W for 6w.  
AZO or oligo.

disadv. (SE): frequent & unwanted (d.t ↑↑ T.):

Hyperlipidemia → C.V. risk Cardiovascular  
DHT → prostate risk  
Estrogen → Gynaecomastia

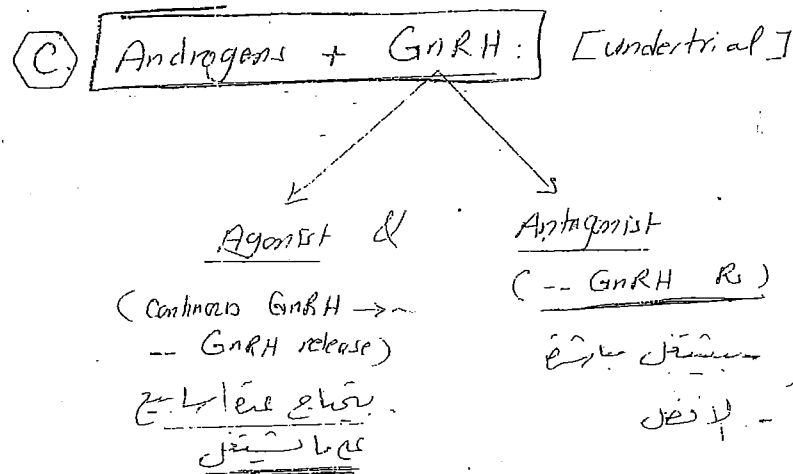
Androgens + Progestins : [Most promising]

low dose is added here to achieve adequate physiological level of T. to maintain its essential extragonadal Action.

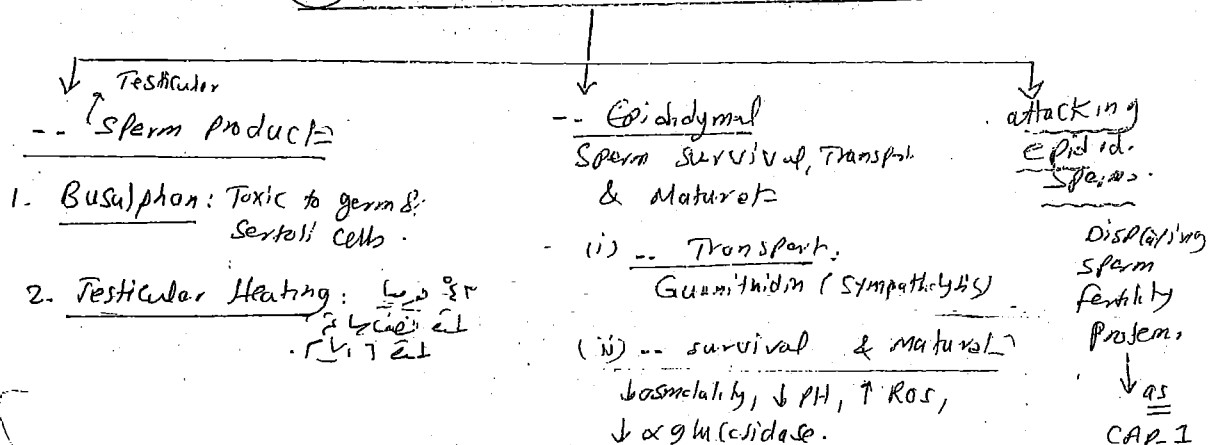
-- GnRH, FSH, LH → -- Spermatogenesis → Infertility (also: Hypoandrogenic manifests).

Preparate : T. Enanthate + either  
 Levonorgestrel (500 µg)  
 Desogestrel (300 µg)  
 Cyproterone Acetate (100 µg)

- Androgens + progestins combination: is more effective in suppression of spermatogenesis than Androgens alone & in the same time the lower dose of Androgen preserve the libido & potency without producing S.E (unlike) of Androgens alone.



### (III) pharmacological Contracept (For research)



### (IV) Immuno Contraception (Contraceptive Vaccines)

product of Antibodies against: GnRH, Gns, sperm specific proteins.

#### References:

Nieschlag 2010, EAU 2010, Medscape article 2010. Ghamriny, Training in Research in Sexual Health - Geneva 2005

## Spinal Cord Injury & Ejaculation

### • Effect of Spinal Cord Injury (SCI) on Ejaculation:

• during Shock Stage (1st few wks) → lost ejaculation (2 Types) & Erection.

• During recovery stage, effect depends on level of injury:

1. Injury at T<sub>10</sub> - L<sub>2</sub> → lost reflex & central ejac. (Permanent loss of both types)
2. Injury above T<sub>10</sub> → lost central ejac. only

### • Causes of infertility in patients w/ SCI:

1. pretesticular causes: abn. axis & absent sympathetic innervation of testes.
2. Testicular causes: ↑ temp.
3. post-testicular causes: dt
  - Stasis of prostatic fluid.
  - UTI
  - Cortical infertility (Anaf. & ED).

### • Treatment of infertility in these patients: Semen Collection →

Cryopreservation (during acute phase after injury to avoid deterioration of semen quality) → ART.

Semen Collection done  
by either

1. Penile Vibrator or
2. Electroejaculator.

## 1. Penile Vibrator

Indications: (i) lesion above T<sub>10</sub> (preserved reflex ejac.)

(ii) Preserved hip flexion.

(iii) Preserved bulbocavernosus reflex.

Procedure:

1. # of UTI
2. Urine alkalinization (by NaHCO<sub>3</sub>).
3. Vibratory @ 2.5 mm amplitude & 100 MHz  
Frequency is applied to the frenulum  
For 5 minutes till ejaculat<sup>n</sup> if ejaculat<sup>n</sup>  
failed → rest for 2 minutes & repeat.

Complications: → Autonomic dysreflexia

• Common in pt. c lesion above T<sub>6</sub>

• Ch. BY: Uncontrolled ↑↑ in Sympathetic outflow → ↑↑ BP, Headache, Flushing & bradycardia

• Prevention of it by pretreatment of pt. c 20 mg Nifedipine given sublingually 20 minutes before the procedure.

## 2. Electroejaculator:

Indication: Failed penile vibrator.

it doesn't result in NL ejaculatory reflex (as in penile vibrator); Semen is ejaculated in episodic manner & may be there is RGE.

• rectal probe is connected to the device → Voltage is ↑↑ (e thermal monitoring to avoid rectal inf.).

Complications:

1. autonomic dysreflexia.
2. Rectal Perforat<sup>n</sup>.